State of Michigan
Department of State Police and
Department of Management and Budget

2002 Model Year Police Vehicle Evaluation

National Law Enforcement and Corrections Technology Center
A Program of the National Institute of Justice

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and
Department of Management and Budget

2002 Model Year Police Vehicle Evaluation Program

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PREFACE

The Michigan State Police Vehicle Test Team is pleased to announce the results of the 2002 model year police vehicle evaluation. This year 15 vehicles were tested, including a non-published prototype Chevrolet Tahoe from General Motors. It is of particular interest because it would be a pursuit rated SUV for the future. This was also the last year you will see the Chevrolet pursuit Camaro. Mopar is back in the police car business and the Dodge Intrepid police package made its official debut at testing. The Dodge Durangos were tested in the Special Service category and are not rated for high-speed applications. Ford had the 2002 and 2003 Police Interceptors and the Long Wheelbase Crown Victoria at the test. Saturday temperatures were cool and Fall like at DaimlerChrysler Proving Grounds, and Monday morning, we had a 3 hour rain delay at our vehicle dynamics test site at Grattan Raceway. Even with the rain delay, we were able to complete the test using our new testing equipment. We appreciate your continued support and encouragement.

The vehicles evaluated this year included:

POLICE CATEGORY

Ford Police Interceptor	4.6L SPFI	
Chevrolet Impala	3.8L SPFI	
AM General Hummer	6.5L	(Turbo Diesel)
Chevrolet Camaro	5.7L SPFI	(Automatic)
2003 Ford Police Interceptor	4.6L SPFI	
Dodge Intrepid	3.5L SPFI	

SPECIAL SERVICE CATEGORY

Ford Long Wheel base Crown Victoria*	4.6L SPFI	
Ford Explorer*	4.6L SFI	(4 Wheel Drive)
Ford Expedition*	5.4L SMFI	(4 Wheel Drive)
Ford Excursion*	6.8L MPFI	(4 Wheel Drive)
Chevrolet Tahoe*	5.3L SPFI	(2 Wheel Drive)
Chevrolet Tahoe*	5.3L SPFI	(4 Wheel Drive)
Dodge Durango*	4.7L SMPI	(2 Wheel Drive)
Dodge Durango*	4.7L SMPI	(4 Wheel Drive)

**Special Service Package vehicles are not suitable for high speed, pursuit or emergency driving according to the manufacturers.*

All of the vehicles were tested with a clean roof (no overhead light or lightbar) and without “A” pillar mount spotlights. We believe this is the best way to ensure all of the cars are tested on an equal basis. Remember that once overhead lights, spotlights, radio antennas, sirens, and other emergency equipment are installed, overall performance may be somewhat lower than we report.

Each vehicle was tested with the tires that are available as original equipment on the production model. Specific tire information for each vehicle is available in the Vehicle Description portion of this report.

DaimlerChrysler Proving Grounds - Acceleration, Top Speed, & Braking Tests
During the braking test, the Hummer brake heat up procedure speeds was at 75 m.p.h. instead of 90 m.p.h. (The Hummer is unable to attain the 90 m.p.h. heat up procedure speed.)

Vehicles equipped with electronic speed limiters are noted in the Acceleration and Top Speed portion of this report.

In calculating brake test results, the slowest deceleration rate was removed from each phase. The average deceleration rates were calculated from the remaining 5 stops in each phase. The final scores are based on the best 10 stops.

Grattan Raceway - Vehicle Dynamics (High Speed Handling) Test
We had a substantial rain delay in the morning. We were able to complete the tests during the afternoon hours after the track dried.

The primary Camaro test car transmission failed. Our staff, with Chevrolet personnel, had a back-up Camaro safety inspected, equipped and prepared for testing. The test was completed using this alternate vehicle.
The 2003 Ford Police Interceptor ABS failed during the 3rd test driver run. Ford, and our staff, were unable to diagnose what happened to the ABS. The system was reset for the 3rd driver and the test rerun without a problem. During the 4th run the ABS failed again. The test driver was instructed to continue the run with the ABS inactive.

*The Chevrolet Tahoes, Ford Explorer, Expedition, Excursion, Long Wheel base Crown Victoria and Dodge Durangos are “special-service” vehicles and are not driven through the vehicle dynamics (high-speed handling) test. These vehicles are not recommended for high-speed emergency driving or pursuit applications.

We recommend you review the information contained in this report and then apply it to the needs of your agency. This report is not an endorsement of products, but a means of learning what’s available for your officers so they can do their job effectively and safely. If anything in this report requires further explanation or clarification, please call or write.

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ACKNOWLEGEMENTS

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F/Lt. Howard Powers, Capt. Gene Hoekwater
Retired Sgt. Bob Ring, retired Sgt. Bill McFall
Retired Sgt. Dave Storer, retired F/Lt. Curt VanDenBerg

Special thanks to General Motors, Ford and DaimlerChrysler vehicle manufacturers for their hard work in building and preparing the test cars. We are grateful for your dedication to law enforcement. Everyday law enforcement looks to these vehicles to do a list of duties varied and enduring.

Finally, thanks to all in the United States and Canada who represent law enforcement and purchasing agencies for your constant encouragement and support. Thanks to our Australian guests for their attendance. We are proud to make a contribution to the law enforcement community.

Michigan State Police Vehicle Test Team

Software helps select vehicles

Staff of the Office of Law Enforcement Standards (OLES), located at the National Institute of Standards and Technology (NIST), has created a computer program for the National Institute of Justice to help police fleet administrators select the patrol vehicle that is best suited to the needs of their department. The system, called AutoBid, is based on vehicle performance test data for police patrol vehicles published annually by the Michigan State Police.

AutoBid helps fleet managers select the best patrol vehicle based on vehicle test scores. It identifies which vehicle has the highest overall test performance and ranks the vehicles according to their relative performance. The overall performance score of a vehicle is based on each test score weighted by the importance weight for each test category assigned by the user. The overall performance score is particularly helpful when an evaluation is needed before a request for bids has been prepared. The performance analysis can be used to determine which models warrant a request for bids. For the 2002 model year, AutoBid will include an additional method of vehicle selection using a combined score based on both vehicle cost and test scores. This method identifies which vehicle is the "Best Buy" in terms of the lowest cost for equivalent test performance and ranks the vehicles by the bid price adjusted for performance.

AutoBid is available as an application, which does not require you to be connected to the Internet while running and will run on any operating system. To use the AutoBid Application you must first download and install the Java Runtime Environment onto your computer. Then you need to download and install the "AutoBid Application. Both of these components can be downloaded from the National Law Enforcement and Corrections Technology Center's (NLECTC's) Internet site, JUSTNET, at http://www.nlectc.org.

About the National Institute of Justice

NIJ is the research and development agency of the U.S. Department of Justice and is the only Federal agency solely dedicated to researching crime control and justice issues. NIJ provides objective, independent, nonpartisan, evidence-based knowledge and tools to meet the challenges of crime and justice, particularly at the State and local levels. NIJ's principal authorities are derived from the Omnibus Crime Control and Safe Streets Act of 1968, as amended (42 U.S.C. §§ 3721–3722).

NIJ's Mission

In partnership with others, NIJ's mission is to prevent and reduce crime, improve law enforcement and the administration of justice, and promote public safety. By applying the disciplines of the social and physical sciences, NIJ—

- **Researches** the nature and impact of crime and delinquency.
- **Develops** applied technologies, standards, and tools for criminal justice practitioners.
- **Evaluates** existing programs and responses to crime.
- **Tests** innovative concepts and program models in the field.
- **Assists** policymakers, program partners, and justice agencies.
- **Disseminates** knowledge to many audiences.

NIJ's Strategic Direction and Program Areas

NIJ is committed to five challenges as part of its strategic plan: 1) **rethinking justice** and the processes that create just communities; 2) **understanding the nexus** between social conditions and crime; 3) **breaking the cycle** of crime by testing research-based interventions; 4) **creating the tools** and technologies that meet the needs of practitioners; and 5) **expanding horizons** through interdisciplinary and international perspectives. In addressing these strategic challenges, the Institute is involved in the following program areas: crime control and prevention, drugs and crime, justice systems and offender behavior, violence and victimization, communications and information technologies, critical incident response, investigative and forensic sciences (including DNA), less-than-lethal technologies, officer protection, education and training technologies, testing and standards, technology assistance to law enforcement and corrections agencies, field testing of promising programs, and international crime control. NIJ communicates its findings through conferences and print and electronic media.

NIJ's Structure

The NIJ Director is appointed by the President and confirmed by the Senate. The NIJ Director establishes the Institute's objectives, guided by the priorities of the Office of Justice Programs, the U.S. Department of Justice, and the needs of the field. NIJ actively solicits the views of criminal justice and other professionals and researchers to inform its search for the knowledge and tools to guide policy and practice.

NIJ has three operating units. The Office of Research and Evaluation manages social science research and evaluation and crime mapping research. The Office of Science and Technology manages technology research and development, standards development, and technology assistance to State and local law enforcement and corrections agencies. The Office of Development and Communications manages field tests of model programs, international research, and knowledge dissemination programs. NIJ is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance, the Bureau of Justice Statistics, the Office of Juvenile Justice and Delinquency Prevention, and the Office for Victims of Crime.

To find out more about the National Institute of Justice, please contact:

National Criminal Justice Reference Service
P.O. Box 6000
Rockville, MD 20849–6000
800–851–3420
e-mail: *askncjrs@ncjrs.org*
NIJ Web site*(http://www.ojp.usdoj.gov/nij*).

About the Law Enforcement and Corrections Standards and Testing Program

The Law Enforcement and Corrections Standards and Testing Program is sponsored by the Office of Science and Technology of the National Institute of Justice (NIJ), U.S. Department of Justice. The program responds to the mandate of the Justice System Improvement Act of 1979, which directed NIJ to encourage research and development to improve the criminal justice system and to disseminate the results to Federal, State, and local agencies.

The Law Enforcement and Corrections Standards and Testing Program is an applied research effort that determines the technological needs of justice system agencies, sets minimum performance standards for specific devices, tests commercially available equipment against those standards, and disseminates the standards and the test results to criminal justice agencies nationwide and internationally.

The program operates through the following:

- The **Law Enforcement and Corrections Technology Advisory Council** (LECTAC), consisting of nationally recognized criminal justice practitioners from Federal, State, and local agencies, assesses technological needs and sets priorities for research programs and items to be evaluated and tested.

- The **Office of Law Enforcement Standards** (OLES) at the National Institute of Standards and Technology develops voluntary national performance standards for compliance testing to ensure that individual items of equipment are suitable for use by criminal justice agencies. The equipment standards developed by OLES are based on laboratory evaluation of commercially available products to devise precise test methods that can be universally applied by any qualified testing laboratory and to establish minimum performance requirements for each attribute of a piece of equipment that is essential to how it functions. OLES-developed standards can serve as design criteria for manufacturers or as the basis for equipment evaluation. The application of the standards, which are highly technical in nature, is augmented through the publication of equipment performance reports and user guides. Individual jurisdictions may use the standards in their own laboratories to test equipment, have equipment tested on their behalf using the standards, or cite the standards in procurement specifications.

- The **National Law Enforcement and Corrections Technology Center** (NLECTC), operated by a grantee, supervises a national compliance-testing program conducted by independent laboratories. The standards developed by OLES serve as performance benchmarks against which commercial equipment is measured. The facilities, personnel, and testing capabilities of the independent laboratories are evaluated by OLES prior to testing each item of equipment. In addition, OLES helps NLECTC staff review and analyze data. Test results are published in consumer product reports designed to help justice system procurement officials make informed purchasing decisions.

Publications are available at no charge through NLECTC. Some documents are also available online through the Justice Technology Information Network (JUSTNET), the center's Internet/World Wide Web site. To request a document or additional information, call 800–248–2742 or 301–519–5060 or write:

National Law Enforcement and Corrections Technology Center
P.O. Box 1160
Rockville, MD 20849–1160
E-mail: *asknlectc@nlectc.org*
World Wide Web address: *http://www.nlectc.org*

About the National Law Enforcement and Corrections Technology Center System

The National Law Enforcement and Corrections Technology Center (NLECTC) system exists to support the Nation's structure of State and local law enforcement and corrections. The United States has more than 18,000 law enforcement agencies, 50 State correctional systems, and thousands of prisons and jails. The fragmented nature of law enforcement and corrections impedes the dissemination of valuable new information, fosters a patchwork marketplace that discourages the commercialization of new technologies, and underscores the need for uniform performance standards for equipment and technologies.

The National Institute of Justice's (NIJ's) Office of Science and Technology (OS&T) created NLECTC in 1994 as a national system of technology centers that are clearinghouses of information and sources of technology assistance and that also attend to special needs, including technology commercialization and standards development.

The NLECTC system's purpose is to determine the needs of the law enforcement and corrections communities and assist them in understanding, using, and benefiting from new and existing technologies that, increasingly, are vital levers of progress in criminal justice. It is especially important to note that NIJ/OS&T and the NLECTC system are the only current programs developed by the Federal Government that focus solely on the development and transfer of technologies to State and local law enforcement and corrections.

NLECTC is a program of NIJ, the research and development arm of the U.S. Department of Justice. The system currently consists of a national center, five regional centers, and several specialty offices. Also contributing to the initiatives of the center system is the Office of Law Enforcement Standards. The centers are collocated with a host organization or agency that specializes in one or more areas of technology research and development.

The National Center, located in Rockville, Maryland, is the system's information hub. Regional centers are currently located in Alaska, California, Colorado, New York, and South Carolina. Specialty centers located around the country deal with border matters (California), commercialization of law enforcement and corrections technologies (West Virginia), rural law enforcement issues (Kentucky), and standards and testing (Maryland).

Each center shares roles with the other centers and has distinctive characteristics. All are focused on helping law enforcement and corrections take full advantage of technology's rapidly growing capacity to serve the purposes of crime control and the criminal justice system.

A national body of criminal justice professionals, the Law Enforcement and Corrections Technology Advisory Council (LECTAC) helps identify research and development priorities, thereby influencing the work of the NLECTC system. In addition, each NLECTC center has a regional advisory council of law enforcement and corrections officials. Together, LECTAC and the advisory councils help to keep the NLECTC system attentive to technological priorities and the needs of law enforcement and corrections. They help to link the end user with the developer to create technologies that adequately meet operational requirements and establish which potential technologies should be pursued for development.

All of the current regional centers have distinctive roles or focus areas that, in many cases, are aligned with the expertise of host organizations and agencies. The centers are currently operated under cooperative agreements or interagency agreements with host organizations and agencies whose employees staff the centers.

To receive more information or to add your name to the NLECTC mailing list, call 800–248–2742 or 301–519–5060, or write:

National Law Enforcement and Corrections Technology Center
P.O. Box 1160
Rockville, MD 20849–1160
E-mail: *asknlectc@nlectc.org*
To obtain an electronic version of this document, access the NIJ Web site
World Wide Web address: *http://www.nlectc.org*

The following is a list of NLECTC regional and affiliated facilities that assist NIJ in fulfilling its mission.

NLECTC–Northeast
26 Electronic Parkway
Rome, NY 13441–4514
(p) 888–338–0584
(f) 315–330–4315
E-mail: *nlectc_ne@rl.af.mil*

NLECTC–Southeast
5300 International Boulevard
North Charleston, SC 29418
(p) 800–292–4385
(f) 843–760–4611
E-mail: *nlectc-se@nlectc-se.org*

NLECTC–Rocky Mountain
2050 East Iliff Avenue
Denver, CO 80208
(p) 800–416–8086
(f) 303–871–2500
E-mail: *nlectc@du.edu*

NLECTC–West
c/o The Aerospace Corporation
2350 East El Segundo Boulevard
El Segundo, CA 90245–4691
(p) 888–548–1618
(f) 310–336–2227
E-mail: *nlectc@law-west.org*

NLECTC–Northwest
4000 Old Seward Highway
Suite 301
Anchorage, AK 99503–6068
(p) 866–569–2969
(f) 907–569–6939
E-mail: *nlectc_nw@ctsc.net*

Border Research and Technology Center
1010 Second Avenue
Suite 1920
San Diego, CA 92101–4912
(p) 888–656–2782
(f) 888–660–2782
E-mail: *info@brtc.nlectc.org*

Rural Law Enforcement Technology Center (RULETC)
1908 North Main Street
Suite 115
Hazard, KY 41701
Phone: 606–436–8848
Fax: 606–436–6758
E-mail: *ruletc@aol.com*

Office of Law Enforcement Standards
100 Bureau Drive
Stop 8102
Gaithersburg, MD 20899–8102
(p) 301–975–2757
(f) 301–948–0978
E-mail: *oles@nist.gov*

Office of Law Enforcement Technology Commercialization
Wheeling Jesuit University
316 Washington Avenue
Wheeling, WV 26003
(p) 888–306–5382
(f) 304–243–2131
E-mail: *oletc@nttc.edu*

About the Office of Law Enforcement Standards

The Office of Law Enforcement Standards (OLES) was established as a matrix management organization in 1971 through a Memorandum of Understanding between the U.S. Departments of Justice and Commerce, based on the recommendations of the President's Commission on Crime. OLES's mission is to apply science and technology to the needs of the criminal justice community, including law enforcement, corrections, forensic science, and the fire service. Although its major objective is to develop minimum performance standards, which are promulgated as voluntary national standards, OLES also undertakes studies leading to the publication of technical reports and user guides.

The areas of research investigated by OLES include clothing, communication systems, emergency equipment, investigative aids, protective equipment, security systems, vehicles, weapons, and analytical techniques and standard reference materials used by the forensic science community. The composition of OLES's projects varies depending on priorities of the criminal justice community at any given time and, as necessary, draws on the resources of the National Institute of Standards and Technology.

OLES assists law enforcement and criminal justice agencies in acquiring, on a cost-effective basis, the high-quality resources they need to do their jobs. To accomplish this, OLES:

- Develops methods for testing equipment performance and examining evidentiary materials.
- Develops standards for equipment and operating procedures.
- Develops standard reference materials.
- Performs other scientific and engineering research as required.

Since the program began in 1971, OLES has coordinated the development of nearly 200 standards, user guides, and advisory reports. Topics range from performance parameters of police patrol vehicles, to performance reports on various speed-measuring devices, to soft body armor testing, to analytical procedures for developing DNA profiles.

The application of technology to enhance the efficiency and effectiveness of the criminal justice community continues to increase. The proper adoption of the products resulting from emerging technologies and the assessment of equipment performance, systems, methodologies, etc., used by criminal justice practitioners constitute critical issues having safety and legal ramifications. The consequences of inadequate equipment performance or inadequate test methods can range from inconvenient to catastrophic. In addition, these deficiencies can adversely affect the general population when they increase public safety costs, preclude arrest, or result in evidence found to be inadmissible in court.

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TEST EQUIPMENT

The following test equipment is utilized during the acceleration, top speed, braking, and vehicle dynamics portions of the evaluation program.

DATRON TECHNOLOGY, INC., 21654 Melrose Ave., Building 16, Southfield, Michigan 48075

DLS Smart Sensor – Optical non-contact speed and distance sensor

BELL HELMETS, Box 927, Rantol, Illinois 61866

Nascar Helmet – Model MC – 400

AMB i.t. US Inc., 1631 Phoenix Blvd., Suite 11, College Park, GA 30349

AMB TranX extended loop decoder

Mains adapter 230 V AC/12 V DC

AMB TranX260 transponders

TEST VEHICLE DESCRIPTIONS AND PHOTOGRAPHS

FORD POLICE INTERCEPTOR
4.6L SPFI

TEST VEHICLE DESCRIPTION

MAKE Ford 2002	**MODEL** Police Interceptor		**SALES CODE NO.** P71		
ENGINE DISPLACEMENT	**CUBIC INCHES** 281		**LITERS**	4.6	
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST**	Dual	
HORSEPOWER (SAENET)	235 @ 4750 RPM		**ALTERNATOR**	135 amp.	
TORQUE	275 ft. lbs. @ 4000 RPM		**BATTERY**	750 cca.	
COMPRESSION RATIO	9.4:1				
TRANSMISSION	**MODEL** 4R70W	**TYPE** 4-Speed electronic automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.27:1				
STEERING	Recirculating ball & nut w/int. pwr. (constant ratio)				
TURNING CIRCLE (CURB TO CURB)	40.9 Feet				
TIRE SIZE, LOAD & SPEED RATING	P225/60R 16 97V Goodyear Eagle RS-A				
SUSPENSION TYPE (FRONT)	Independent SLA with ball joint & coil spring				
SUSPENSION TYPE (REAR)	4 bar link with Watts Linkage				
GROUND CLEARANCE, MINIMUM	6.0 in.	**LOCATION** Transmission			
BRAKE SYSTEM	Power, dual front piston, single rear piston, 4 circuit anti-lock				
BRAKES, FRONT	**TYPE**	Vented disc	**SWEPT AREA**	314.1 sq. in.	
BRAKES, REAR	**TYPE**	Solid disc	**SWEPT AREA**	174.8 sq. in.	
FUEL CAPACITY	**GALLONS**	19.0	**LITERS**	71.9	
GENERAL MEASUREMENTS	**WHEELBASE**	114.7 in.	**LENGTH**	212.0 in.	
	TEST WEIGHT	4043 lbs.	**HEIGHT**	58.5 in.	
HEADROOM	**FRONT**	39.4 in.	**REAR**	38.0 in.	
LEGROOM	**FRONT**	42.5 in.	**REAR**	39.6 in.	
SHOULDER ROOM	**FRONT**	60.8 in.	**REAR**	60.3 in.	
HIPROOM	**FRONT**	57.1 in.	**REAR**	59.0 in.	
INTERIOR VOLUME	**FRONT**	58.2 cu. ft.	**REAR**	51.1 cu. ft.	
	COMB	109.3 cu. ft.	**TRUNK**	20.6 cu. ft.	
EPA MILEAGE EST. (MPG)	**CITY** 15	**HIGHWAY** 22	**COMBINED** 18		

CHEVROLET IMPALA (9C1)
3.8L SPFI

TEST VEHICLE DESCRIPTION

MAKE Chevrolet 9C1	**MODEL** Impala		**SALES CODE NO.** 1WF19	
ENGINE DISPLACEMENT	**CUBIC INCHES** 231		**LITERS** 3.8	
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST** Single	
HORSEPOWER (SAENET)	200 @ 5200 RPM		**ALTERNATOR** 125 amp.	
TORQUE	200 ft. lbs. @ 4000 RPM		**BATTERY** 690 cca.	
COMPRESSION RATIO	9.4:1			
TRANSMISSION	**MODEL** 4T65E	**TYPE** 4-Speed electronic automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	3.29:1			
STEERING	Power Rack and Pinion			
TURNING CIRCLE (CURB TO CURB)	38.0 Feet			
TIRE SIZE, LOAD & SPEED RATING	P225/60R16 97H Goodyear RS-A			
SUSPENSION TYPE (FRONT)	Independent McPherson strut, coil springs & stabilizer bar			
SUSPENSION TYPE (REAR)	Independent Tri-link coil spring over strut & stabilizer bar			
GROUND CLEARANCE, MINIMUM	6.1 in.	**LOCATION** Engine cradle		
BRAKE SYSTEM	Power, dual hydraulic, anti-lock			
BRAKES, FRONT	**TYPE** Vented disc		**SWEPT AREA** 235.4 sq. in.	
BRAKES, REAR	**TYPE** Solid disc		**SWEPT AREA** 160.3 sq. in.	
FUEL CAPACITY	**GALLONS** 17.0		**LITERS** 64.3	
GENERAL MEASUREMENTS	**WHEELBASE** 110.5 in.		**LENGTH** 200.1 in.	
	TEST WEIGHT 3593 lbs.		**HEIGHT** 57.3 in.	
HEADROOM	**FRONT** 39.2 in.		**REAR** 36.8 in.	
LEGROOM	**FRONT** 42.2 in.		**REAR** 38.4 in.	
SHOULDER ROOM	**FRONT** 59.0 in.		**REAR** 58.9 in.	
HIPROOM	**FRONT** 56.5 in.		**REAR** 55.7 in.	
INTERIOR VOLUME	**FRONT** 56.5 cu. ft.		**REAR** 48.2 cu. ft.	
	COMB 104.7 cu. ft.		**TRUNK** 17.6 cu. ft.*	
EPA MILEAGE EST. (MPG)	**CITY** 20	**HIGHWAY** 29	**COMBINED** 23	

*Compact spare tire.

DODGE INTREPID
3.5L SPFI

TEST VEHICLE DESCRIPTION

MAKE Dodge	**MODEL** Intrepid		**SALES CODE NO.** 25E	
ENGINE DISPLACEMENT	**CUBIC INCHES** 214		**LITERS**	3.5
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST**	Single
HORSEPOWER (SAENET)	242 @ 6400 RPM		**ALTERNATOR**	160 amp.
TORQUE	248 ft. lbs. @ 3950 RPM		**BATTERY**	600 cca.
COMPRESSION RATIO	9.9:1			
TRANSMISSION	**MODEL** 42LE	**TYPE** 4-Speed electronic automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	3.66:1			
STEERING	Power Rack & Pinion			
TURNING CIRCLE (CURB TO CURB)	37.6 ft.			
TIRE SIZE, LOAD & SPEED RATING	P225/60R16 97V Goodyear Eagle RS-A			
SUSPENSION TYPE (FRONT)	Independent Macpherson strut, coil springs & sway bar			
SUSPENSION TYPE (REAR)	Independent Macpherson strut, coil springs & sway bar			
GROUND CLEARANCE, MINIMUM	5.7 in.	**LOCATION** Sway bar		
BRAKE SYSTEM	Power, single piston, anti-lock			
BRAKES, FRONT	**TYPE**	Vented disc	**SWEPT AREA**	287.2 sq. in.
BRAKES, REAR	**TYPE**	Solid disc	**SWEPT AREA**	184.6 sq. in.
FUEL CAPACITY	**GALLONS**	17.0	**LITERS**	64.4
GENERAL MEASUREMENTS	**WHEELBASE**	113.0 in.	**LENGTH**	203.7 in.
	TEST WEIGHT	3583 lbs.	**HEIGHT**	55.9 in.
HEADROOM	**FRONT**	38.3 in.	**REAR**	37.5 in.
LEGROOM	**FRONT**	42.2 in.	**REAR**	39.1 in.
SHOULDER ROOM	**FRONT**	59.0 in.	**REAR**	58.1 in.
HIPROOM	**FRONT**	56.3 in.	**REAR**	56.6 in.
INTERIOR VOLUME	**FRONT**	55.0 cu. ft.	**REAR**	49.5 cu. ft.
	COMB	104.5 cu. ft.	**TRUNK**	18.4 cu. ft.
EPA MILEAGE EST. (MPG)	**CITY** 18	**HIGHWAY** 26	**COMBINED** 21	

CHEVROLET CAMARO
5.7L SPFI (AUTOMATIC)

TEST VEHICLE DESCRIPTION

MAKE Chevrolet	**MODEL** Camaro		**SALES CODE NO.** 1FP87		
ENGINE DISPLACEMENT	**CUBIC INCHES** 350		**LITERS** 5.7		
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST** Dual		
HORSEPOWER (SAENET)	310 @ 5200 RPM		**ALTERNATOR** 105 amp.		
TORQUE	335 ft. lbs. @ 4000 RPM		**BATTERY** 525 cca.		
COMPRESSION RATIO	10.1:1				
TRANSMISSION	**MODEL** 4L60E	**TYPE** 4-Speed electronic automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.23:1				
STEERING	Power, rack & pinion				
TURNING CIRCLE (CURB TO CURB)	39.0 Feet				
TIRE SIZE, LOAD & SPEED RATING	P245/50ZR16 Goodyear Eagle RS-A				
SUSPENSION TYPE (FRONT)	Independent SLA, coil over monotube gas-charged shocks & stabilizer bar				
SUSPENSION TYPE (REAR)	Salisbary axle, torque arm, trailing arm, track bar coil springs, gas shocks & stabilizer bar				
GROUND CLEARANCE, MINIMUM	4.4 in.	**LOCATION** Catalytic converter shield			
BRAKE SYSTEM	Power, anti-lock				
BRAKES, FRONT	**TYPE** Vented disc		**SWEPT AREA** 238.6 sq. in.		
BRAKES, REAR	**TYPE** Vented disc		**SWEPT AREA** 169.0 sq. in.		
FUEL CAPACITY	**GALLONS** 15.5		**LITERS** 58.7		
GENERAL MEASUREMENTS	**WHEELBASE** 101.1 in.		**LENGTH** 193.2 in.		
	TEST WEIGHT 3462 lbs.		**HEIGHT** 51.3 in.		
HEADROOM	**FRONT** 37.2 in.		**REAR** 35.3 in.		
LEGROOM	**FRONT** 43.0 in.		**REAR** 26.8 in.		
SHOULDER ROOM	**FRONT** 57.4 in.		**REAR** 55.8 in.		
HIPROOM	**FRONT** 52.8 in.		**REAR** 44.4 in.		
INTERIOR VOLUME	**FRONT** 53.1 cu. ft.		**REAR** 28.8 cu. ft.		
	COMB 81.9 cu. ft.		**TRUNK** 12.9 cu. ft.		
EPA MILEAGE EST. (MPG)	**CITY** 17	**HIGHWAY** 27	**COMBINED** 20		

AM GENERAL HUMMER
6.5L TURBO DIESEL

TEST VEHICLE DESCRIPTION

MAKE AM General	**MODEL** Hummer		**SALES CODE NO.** HMCS	
ENGINE DISPLACEMENT	**CUBIC INCHES** 396		**LITERS** 6.5	
FUEL SYSTEM	Turbo Diesel		**EXHAUST** Single Stainless steel	
HORSEPOWER (SAENET)	195 @ 3400 RPM		**ALTERNATOR** 124 amp.	
TORQUE	430 ft. lbs. @ 1800 RPM		**BATTERY** Dual 800 cca.	
COMPRESSION RATIO	20.2:1			
TRANSMISSION	**MODEL** 4L80E	**TYPE** 4-Speed electronic automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	4:92 Front & rear			
STEERING	Power assisted variable ratio			
TURNING CIRCLE (CURB TO CURB)	53.0 Feet			
TIRE SIZE, LOAD & SPEED RATING	37 X 12.50R17LT M/S Goodyear Wrangler GSA			
SUSPENSION TYPE (FRONT)	Ind. double A frame, coil springs, axle shocks			
SUSPENSION TYPE (REAR)	Ind. double A frame, coil springs, axle shocks			
GROUND CLEARANCE, MINIMUM	16.0 in.	**LOCATION** Axle housing		
BRAKE SYSTEM	Power 4 wheel anti-lock disc			
BRAKES, FRONT	**TYPE** Disc		**SWEPT AREA** 229 sq. in.	
BRAKES, REAR	**TYPE** Disc		**SWEPT AREA** 229 sq. in.	
FUEL CAPACITY	**GALLONS** 42.0		**LITERS** 159.0	
GENERAL MEASUREMENTS	**WHEELBASE** 130.0 in.		**LENGTH** 184.5 in.*	
	TEST WEIGHT 7455 lbs.		**HEIGHT** 75.0 in.	
HEADROOM	**FRONT** 37.5 in.		**REAR** 36.7 in.	
LEGROOM	**FRONT** 36.0 in.		**REAR** 36.0 in.	
SHOULDER ROOM	**FRONT** 78.8 in.		**REAR** 78.8 in.	
HIPROOM	**FRONT** 50.6 in.		**REAR** 50.6 in.	
INTERIOR VOLUME	**FRONT** 61.6 cu. ft.		**REAR** 61.6 cu. ft.	
	COMB 123.2 cu. ft.		**TRUNK** 57.85 cu. ft.	
EPA MILEAGE EST. (MPG)	**CITY** 9	**HIGHWAY** 10	**COMBINED** 9**	

*With winch.
**Class III vehicle – not tested to normal EPA requirements.

FORD 2003 POLICE INTERCEPTOR
4.6L SPFI

TEST VEHICLE DESCRIPTION

MAKE Ford 2003	**MODEL** Police Interceptor		**SALES CODE NO.** P71		
ENGINE DISPLACEMENT	**CUBIC INCHES** 281		**LITERS**	4.6	
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST**	Dual	
HORSEPOWER (SAENET)	235 @ 4750 RPM		**ALTERNATOR**	135 amp.	
TORQUE	275 ft. lbs. @ 4000 RPM		**BATTERY**	750 cca.	
COMPRESSION RATIO	9.4:1				
TRANSMISSION	**MODEL** 4R70W	**TYPE** 4-Speed electronic automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.27:1				
STEERING	Rack & Pinion, variable ratio, 3 turns lock-to-lock				
TURNING CIRCLE (CURB TO CURB)	40.3 Feet				
TIRE SIZE, LOAD & SPEED RATING	P225/60R 16 97V Goodyear Eagle RS-A				
SUSPENSION TYPE (FRONT)	Independent SLA with ball joint & coil spring				
SUSPENSION TYPE (REAR)	4 bar link with Watts Linkage				
GROUND CLEARANCE, MINIMUM	6.0 in.	**LOCATION** Transmission			
BRAKE SYSTEM	Power, dual front piston, single rear piston, 4 circuit & ABS				
BRAKES, FRONT	**TYPE**	Vented disc	**SWEPT AREA**	273 sq. in.	
BRAKES, REAR	**TYPE**	Vented disc	**SWEPT AREA**	176 sq. in.	
FUEL CAPACITY	**GALLONS**	19.0	**LITERS**	71.9	
GENERAL MEASUREMENTS	**WHEELBASE**	114.7 in.	**LENGTH**	212.0 in.	
	TEST WEIGHT	4154 lbs.	**HEIGHT**	58.5 in.	
HEADROOM	**FRONT**	39.4 in.	**REAR**	38.0 in.	
LEGROOM	**FRONT**	42.5 in.	**REAR**	39.6 in.	
SHOULDER ROOM	**FRONT**	60.8 in.	**REAR**	60.3 in.	
HIPROOM	**FRONT**	57.1 in.	**REAR**	59.0 in.	
INTERIOR VOLUME	**FRONT**	58.2 cu. ft.	**REAR**	51.1 cu. ft.	
	COMB	109.3 cu. ft.	**TRUNK**	20.6 cu. ft.	
EPA MILEAGE EST. (MPG)	**CITY** TBD	**HIGHWAY** TBD	**COMBINED** TBD		

TBD: Not available until March 2002.

TEST VEHICLE DESCRIPTION SUMMARY

	Ford 2002 Police Interceptor	Chevrolet Impala	Dodge Intrepid
ENGINE DISPLACEMENT – CU. IN.	281	231	214
ENGINE DISPLACEMENT – LITERS	4.6	3.8	3.5
ENGINE FUEL SYSTEM	SPFI	SPFI	SPFI
HORSEPOWER (SAE NET)	235	200	242
TORQUE (FT. LBS.)	275	200	248
COMPRESSION RATIO	9.4:1	9.4:1	9.9:1
AXLE RATIO	3.27:1	3.29:1	3.66:1
TURNING CIRCLE – FT. CURB TO CURB	40.9	38.0	37.6
TRANSMISSION	4 Speed elec. auto	4 Speed elec. auto	4 Speed elec. auto
TRANSMISSION MODEL NUMBER	4R70W	4T65E	42LE
LOCKUP TORQUE CONVERTER	Yes	Yes	Yes
TRANSMISSION OVERDRIVE	Yes	Yes	Yes
TIRE SIZE	P225/60R	P225/60R	P225/60R
WHEEL RIM SIZE – INCHES	16	16	16
GROUND CLEARANCE – INCHES	6.0	6.1	5.7
BRAKE SYSTEM	Power, ABS	Power, ABS	Power, ABS
BRAKES – FRONT TYPE	Vented Disc	Vented Disc	Vented Disc
BRAKES – REAR TYPE	Solid Disc	Solid Disc	Solid Disc
FUEL CAPACITY – GALLONS	19.0	17.0	17.0
FUEL CAPACITY – LITERS	71.9	64.3	64.4
OVERALL LENGTH – INCHES	212.0	200.1	203.7
OVERALL HEIGHT – INCHES	58.5	57.3	55.9
TEST WEIGHT – LBS.	4043	3593	3583
WHEELBASE – INCHES	114.7	110.5	113.0
HEADROOM FRONT – INCHES	39.4	39.2	38.3
HEADROOM REAR – INCHES	38.0	36.8	37.5
LEGROOM FRONT – INCHES	42.5	42.2	42.2
LEGROOM REAR – INCHES	39.6	38.4	39.1
SHOULDER ROOM FRONT – INCHES	60.8	59.0	59.0
SHOULDER ROOM REAR – INCHES	60.3	58.9	58.1
HIPROOM FRONT – INCHES	57.1	56.5	56.3
HIPROOM REAR – INCHES	59.0	55.7	56.6
INTERIOR VOLUME FRONT – CU. FT.	58.2	56.5	55.0
INTERIOR VOLUME REAR – CU. FT.	51.1	48.2	49.5
INTERIOR VOLUME COMB. – CU. FT.	109.3	104.7	104.5
TRUNK VOLUME – CU. FT.	20.6	17.6*	18.4
EPA MILEAGE – CITY – MPG	15	20	18
EPA MILEAGE – HIGHWAY – MPG	22	29	26
EPA MILEAGE – COMBINED – MPG	18	23	21

*Compact spare.

TEST VEHICLE DESCRIPTION SUMMARY

	Chevrolet Camaro	AM General Hummer	Ford 2003 Police Interceptor
ENGINE DISPLACEMENT – CU. IN.	350	396	281
ENGINE DISPLACEMENT – LITERS	5.7	6.5	4.6
ENGINE FUEL SYSTEM	SPFI	Turbo Diesel	SPFI
HORSEPOWER (SAE NET)	310	195	235
TORQUE (FT. LBS.)	335	430	275
COMPRESSION RATIO	10.1:1	20.2:1	9.4:1
AXLE RATIO	3.23:1	4:92	3.27:1
TURNING CIRCLE – FT. CURB TO CURB	39.0	53.0	40.3
TRANSMISSION	4 Speed elec. auto	4 Speed elec. auto	4 Speed elec. auto
TRANSMISSION MODEL NUMBER	4L60E	4L80E	4R70W
LOCKUP TORQUE CONVERTER	Yes	Yes	Yes
TRANSMISSION OVERDRIVE	Yes	Yes	Yes
TIRE SIZE	P245/50ZR	37X12.50R	P225/60R
WHEEL RIM SIZE – INCHES	16	17	16
GROUND CLEARANCE – INCHES	4.4	16.0	6.0
BRAKE SYSTEM	Power, ABS	Power, ABS	Power, ABS
BRAKES – FRONT TYPE	Vented Disc	Disc	Vented Disc
BRAKES – REAR TYPE	Vented Disc	Disc	Vented Disc
FUEL CAPACITY – GALLONS	15.5	42.0	19.0
FUEL CAPACITY – LITERS	58.7	159.0	71.9
OVERALL LENGTH – INCHES	193.2	184.5*	212.0
OVERALL HEIGHT – INCHES	51.3	75.0	58.5
TEST WEIGHT – LBS.	3462	7455	4154
WHEELBASE – INCHES	101.1	130.0	114.7
HEADROOM FRONT – INCHES	37.2	37.5	39.4
HEADROOM REAR – INCHES	35.3	36.7	38.0
LEGROOM FRONT – INCHES	43.0	36.0	42.5
LEGROOM REAR – INCHES	26.8	36.0	39.6
SHOULDER ROOM FRONT – INCHES	57.4	78.8	60.8
SHOULDER ROOM REAR – INCHES	55.8	78.8	60.3
HIPROOM FRONT – INCHES	52.8	50.6	57.1
HIPROOM REAR – INCHES	44.4	50.6	59.0
INTERIOR VOLUME FRONT – CU. FT.	53.1	61.6	58.2
INTERIOR VOLUME REAR – CU. FT.	28.8	61.6	51.1
INTERIOR VOLUME COMB. – CU. FT.	81.9	123.2	109.3
TRUNK VOLUME – CU. FT.	12.9	57.85	20.6
EPA MILEAGE – CITY – MPG	17	9	TBD
EPA MILEAGE – HIGHWAY – MPG	27	10	TBD
EPA MILEAGE – COMBINED – MPG	20	9**	TBD

*With winch.
**Class III vehicle – not tested to normal EPA requirements.
TBD: Not available until March 2002.

VEHICLE DYNAMICS TESTING

VEHICLE DYNAMICS TESTING

TEST OBJECTIVE

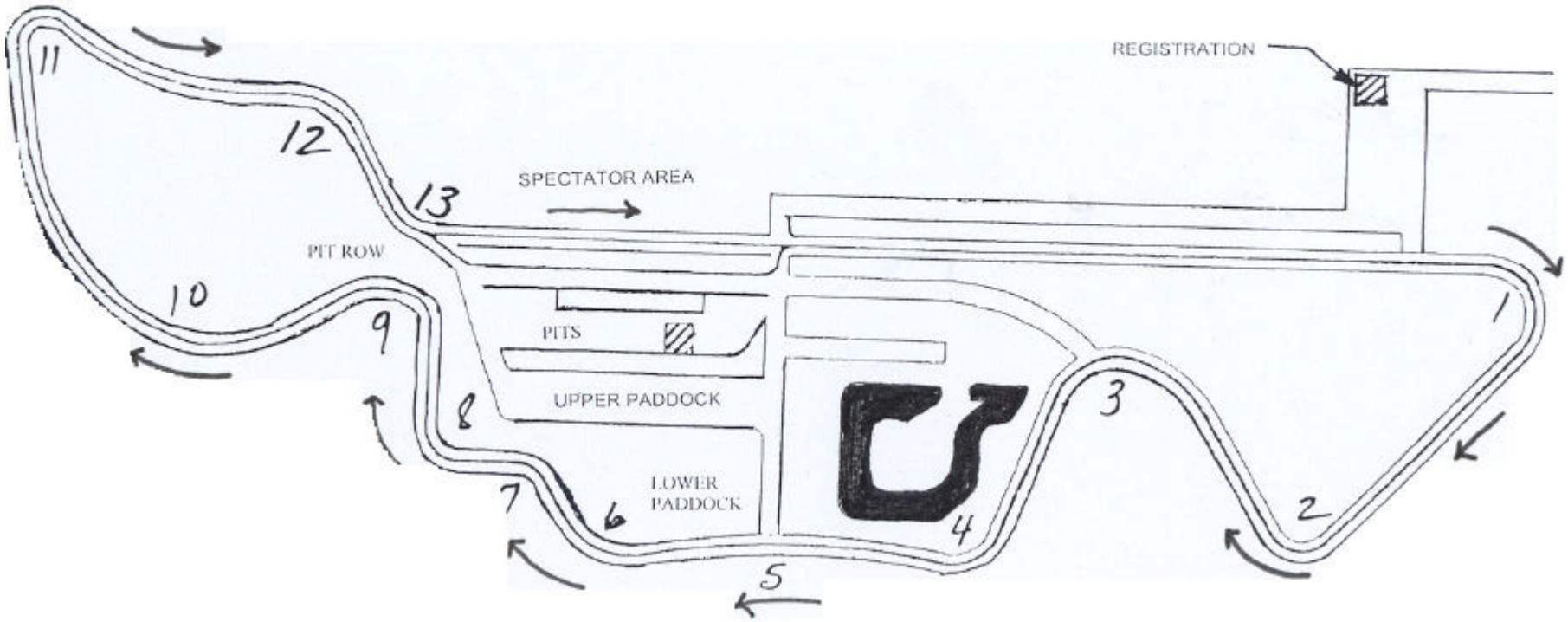
Determine each vehicle's high-speed pursuit or emergency handling characteristics and performance in comparison to the other vehicles in the test group. The course used is a 2-mile road-racing type configuration, containing hills, curves, and corners. The course simulates actual conditions encountered in pursuit or emergency driving situations in the field, with the exception of other traffic. The evaluation will be a true test of the success or failure of the vehicle manufacturers to offer vehicles that provide the optimum balance between handling (suspension components), acceleration (usable horsepower), and braking characteristics.

TEST METHODOLOGY

Each vehicle will be driven over the course for 16 timed laps, using 4 separate drivers. The final score for each vehicle will be the average of the fastest of 12 timed laps.

Grattan Raceway Park

7201 Lessiter
Belding, Michigan 48809



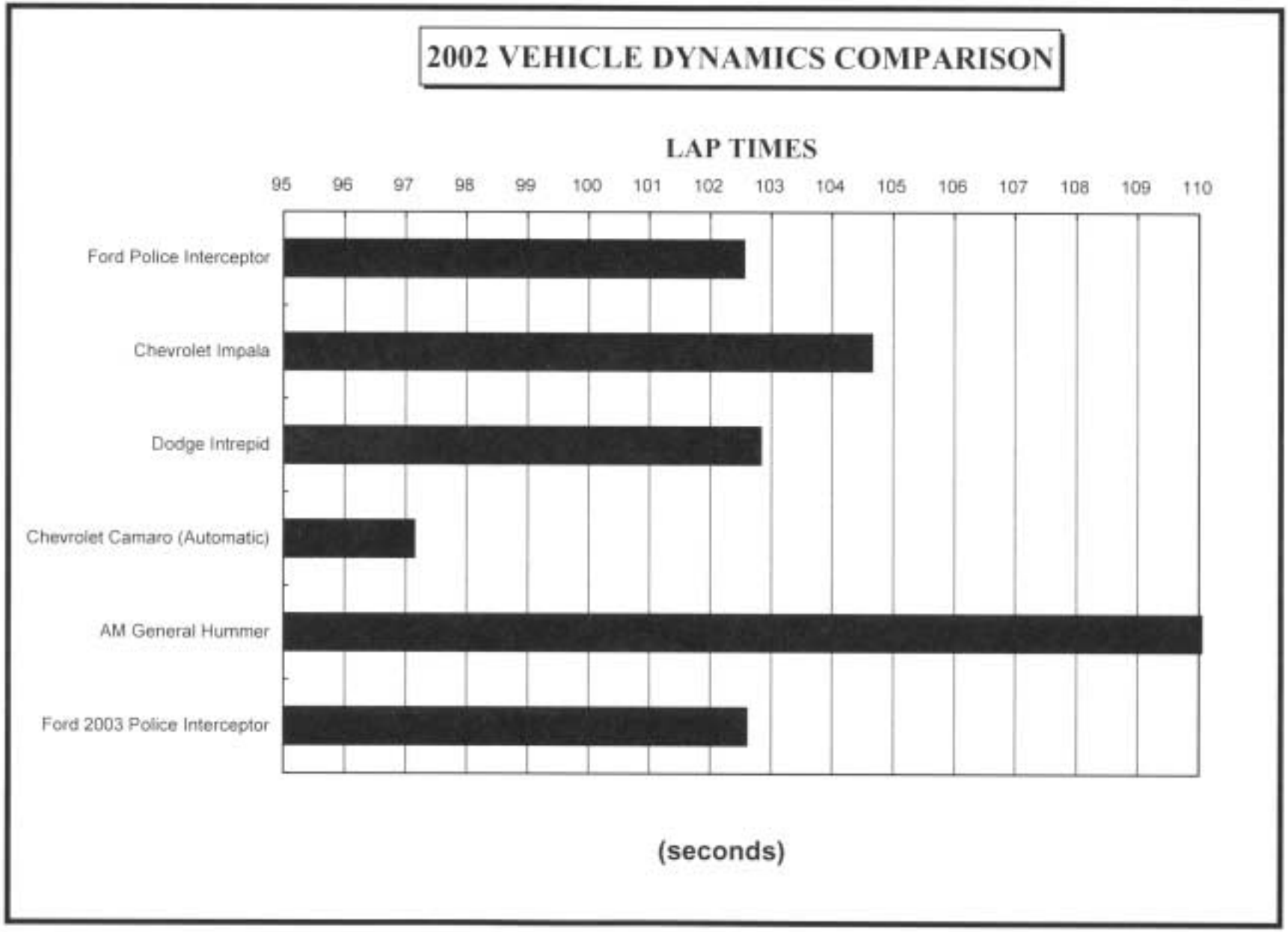
Arrows indicate Michigan State Police Road Test Course and Direction of Travel.

VEHICLE DYNAMICS TESTING

VEHICLES	DRIVERS	LAP 1	LAP 2	LAP 3	LAP 4	AVERAGE
Ford 2002	Wilson	1:42.36	1:42.57	1:42.34	1:42.96	
Police Interceptor	Schutter	1:42.83	1:43.04	1:43.02	1:43.44	
4.6L SPFI	Flegel	1:42.36	1:42.24	1:42.38	1:42.71	
ABS Brakes	Clark	1:42.76	1:42.09	1:43.02	1:43.60	
OVERALL AVERAGE						**1:42.55**
Chevrolet	Wilson	1:44.76	1:44.53	1:45.61	1:45.03	
Impala	Schutter	1:44.87	1:44.77	1:44.41	1:44.85	
3.8L SPFI	Flegel	1:44.87	1:44.40	1:44.67	1:44.50	
ABS Brakes	Clark	1:44.90	1:44.58	1:44.60	1:45.13	
OVERALL AVERAGE						**1:44.65**
Dodge	Wilson	1:43.19	1:42.33	1:43.52	1:43.76	
Intrepid	Schutter	1:44.05	1:43.63	1:43.78	1:43.74	
3.5L SPFI	Flegel	1:42.57	1:42.25	1:42.54	1:42.79	
ABS Brakes	Clark	1:42.91	1:42.58	1:42.92	1:42.76	
OVERALL AVERAGE						**1:42.83**
Chevrolet	Wilson	1:36.05	1:36.20	1:36.68	1:36.60	
Camaro Automatic	Schutter	1:37.97	1:38.87	1:39.29	1:38.99	
5.7L SPFI	Flegel	1:37.20	1:38.36	1:37.74	1:39.00	
ABS Brakes	Clark	1:37.11	1:38.29	1:36.81	1:36.68	
OVERALL AVERAGE						**1:37.14**
AM General	Wilson	2:02.14	2:02.02	2:01.63	2:02.38	
Hummer	Schutter	2:02.44	2:03.69	2:03.06	2:02.89	
6.5L Turbo Diesel	Flegel	2:01.11	2:01.10	2:00.64	2:00.39	
ABS Brakes	Clark	2:02.55	2:01.84	2:01.33	2:01.60	
OVERALL AVERAGE						**2:01.55**
Ford 2003	Wilson	1:43.33	1:43.20	1:43.11	1:43.35	
Police Interceptor	Schutter	1:42.40	1:42.43	1:42.56	1:42.48	
4.6L SPFI	Flegel	1:43.05	1:43.09	1:43.05	1:43.20	
ABS Brakes	Clark	1:43.14	1:42.03	1:41.86	1:42.03	
OVERALL AVERAGE						**1:42.60**

VEHICLE DYNAMICS IN PROGRESS

Dodge, Chevrolet & Ford on the high-speed handling course.



Note: The Hummer lap time was 121.55 seconds.

ACCELERATION, TOP SPEED AND BRAKE TESTING

ACCELERATION AND TOP SPEED TESTING

ACCELERATION TEST OBJECTIVE

Determine the ability of each test vehicle to accelerate from a standing start to 60 mph, 80 mph, and 100 mph, and determine the distance to reach 110 mph and 120 mph.

ACCELERATION TEST METHODOLOGY

Using a DLS Smart Sensor – Optical non-contact Speed and Distance Sensor in conjunction with a lap top computer, each vehicle is driven through four acceleration sequences, two northbound and two southbound, to allow for wind direction. The four resulting times for each target speed are averaged and the average times used to derive scores on the competitive test for acceleration.

TOP SPEED TEST OBJECTIVE

Determine the actual top speed attainable by each test vehicle within a distance of 14 miles from a standing start.

TOP SPEED TEST METHODOLOGY

Following the fourth acceleration run, each test vehicle will continue to accelerate to the top speed attainable within 14 miles from the start of the run. The highest speed attained within the 14-mile distance will be the vehicle's score on the competitive test for top speed.

The Camaro on its way to a 160 mph run.

BRAKE TESTING

BRAKE TEST OBJECTIVE

Determine the deceleration rate attained by each test vehicle on twelve 60 – 0 mph impending skid (threshold) stops, with ABS in operation if the vehicle is so equipped. Each vehicle will be scored on the average deceleration rate it attains.

BRAKE TEST METHODOLOGY

Each vehicle will make two decelerations at specific predetermined points on the test road from 90 – 0 mph at 22 ft/s^2, with the driver using a decelerometer to maintain the deceleration rate. Immediately after these "heat-up" stops are completed, the vehicle will be turned around and will make six measured 60 – 0 mph impending skid (threshold) stops with ABS in operation, if so equipped, at specific predetermined points. Following a four 4-minute heat soak, the entire sequence will be repeated. The exact initial velocity at the beginning of each of the 60 – 0 mph decelerations, and the exact distance required to make each stop will be recorded by means of a non contact optical sensor in conjunction with electronic speed and distance meters. In calculating brake test results, the slowest deceleration rate was removed from each phase. The average deceleration rates were calculated from the remaining 5 stops in each phase. The final scores are based on the best 10 stops, which is the vehicle's score for this test.

DECELERATION RATE FORMULA

$$\text{Deceleration Rate (DR)} = \frac{\text{Initial Velocity*(IV) squared}}{\text{2 times Stopping Distance (SD)}} = \frac{(IV)^2}{2\,(SD)}$$

EXAMPLE:

Initial Velocity =89.175 ft/s (60.8 mph x 1.4667*)
Stopping Distance =171.4 ft.

$$DR = \frac{(IV)^2}{2(SD)} = \frac{(89.175)^2}{2(171.4)} = \frac{7952.24}{342.8} = 23.198 \text{ ft/s}^2$$

Once a vehicle's average deceleration rate has been determined, it is possible to calculate the stopping distance from any given speed by utilizing the following formula:

Select a speed; translate that speed into feet per second; square the feet per second figure by multiplying it by itself; divide the resultant figure by 2; divide the remaining figure by the average deceleration rate of the vehicle in question.

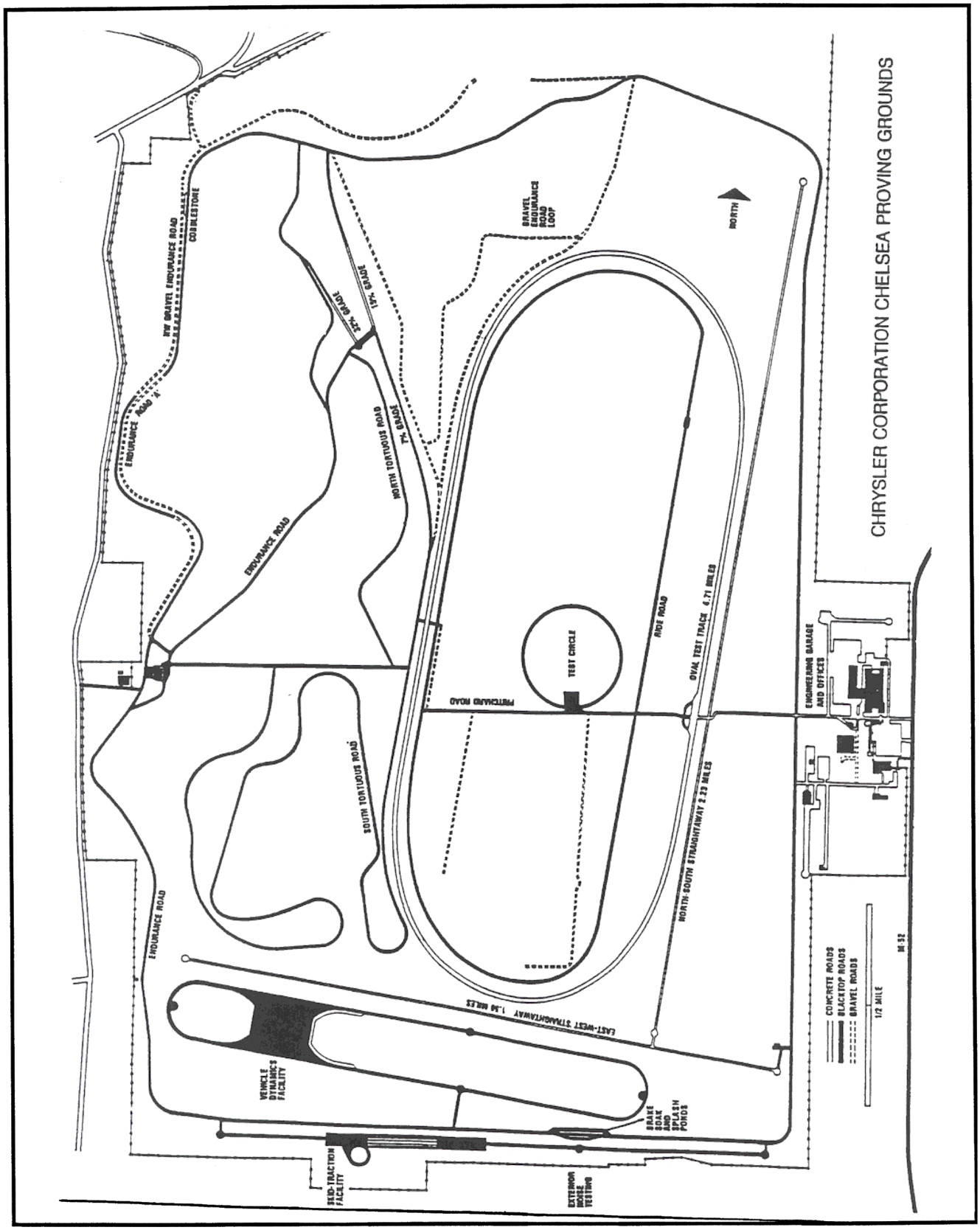
EXAMPLE:

60 mph = 88.002 ft/s x 88.002 = 7744.352 / 2 = 3872.176 / 23.198 ft/s^2 = 166.9 ft.

*Initial velocity must be expressed in terms of feet per second, with 1 mile per hour being equal to 1.4667 feet per second.

BRAKE TESTING

Preparation and testing at the East-West straightaway.


CHRYSLER CORPORATION CHELSEA PROVING GROUNDS
NORTH
BRAVEL ENDURANCE ROAD LOOP
IVW GRAVEL ENDURANCE ROAD
COBBLESTONE
ENDURANCE ROAD 'A'
3½% GRADE
14½% GRADE
7½ GRADE
NORTH TORTUOUS ROAD
ENDURANCE ROAD
TEST CIRCLE
RIDE ROAD
OVAL TEST TRACK 4.71 MILES
ENGINEERING GARAGE AND OFFICES
PRITCHARD ROAD
SOUTH TORTUOUS ROAD
NORTH-SOUTH STRAIGHTAWAY 2.23 MILES
ENDURANCE ROAD
EAST-WEST STRAIGHTAWAY 1.34 MILES
VEHICLE DYNAMICS FACILITY
BRAKE NOISE SPLASH PONDS
HIGH-TRACTION FACILITY
EXTERNOR NOISE TESTING
CONCRETE ROADS
BLACKTOP ROADS
GRAVEL ROADS
1/2 MILE
M-52

SUMMARY OF ACCELERATION, TOP SPEED, AND BRAKE TESTING

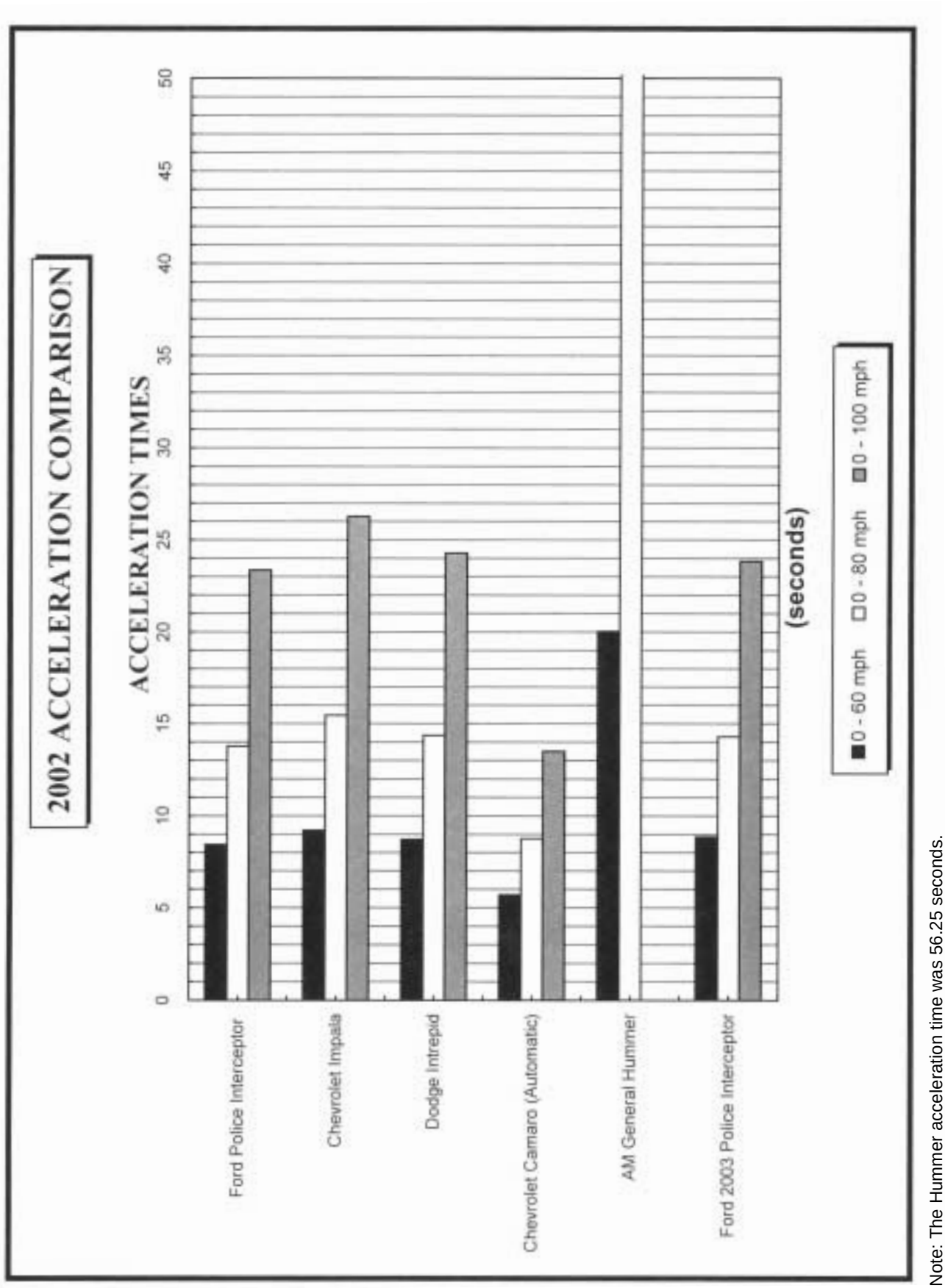
ACCELERATION*		Ford 2002 Police Interceptor 4.6L SPFI	Chevrolet Impala 3.8L SPFI	Dodge Intrepid 3.5L SPFI
0 – 20 mph	(sec.)	1.85	2.06	1.98
0 – 30 mph	(sec.)	3.14	3.28	3.21
0 – 40 mph	(sec.)	4.49	4.71	4.60
0 – 50 mph	(sec.)	6.17	6.70	6.40
0 – 60 mph	(sec.)	8.42	9.21	8.72
0 – 70 mph	(sec.)	10.84	11.98	11.30
0 – 80 mph	(sec.)	13.77	15.44	14.35
0 – 90 mph	(sec.)	18.14	20.47	18.80
0 – 100 mph	(sec.)	23.34	26.27	24.27
TOP SPEED	(mph)	129**	124**	135**
DISTANCE TO REACH				
110 mph	(miles)	.62	.72	.66
120 mph	(miles)	.99	1.92	.97
QUARTER MILE				
Time	(sec.)	16.43	17.04	16.68
Speed	(miles)	86.53	83.65	85.48
		ABS	**ABS**	**ABS**
BRAKING – PHASE I				
Average Deceleration Rate	(ft/s^2)	27.87	25.60	25.30
BRAKING – PHASE II				
Average Deceleration Rate	(ft/s^2)	27.47	26.52	26.54
BRAKING – FINAL SCORE * **				
Deceleration Rate	**(ft/s^2)**	**27.67**	**26.06**	**25.92**
Projected Stopping Distance from 60 mph	(feet)	139.9	148.6	149.4

* Four run average.
**Vehicle equipped with an electronic speed limiter.
***See individual brake testing pages for the Michigan State Police minimum requirements.

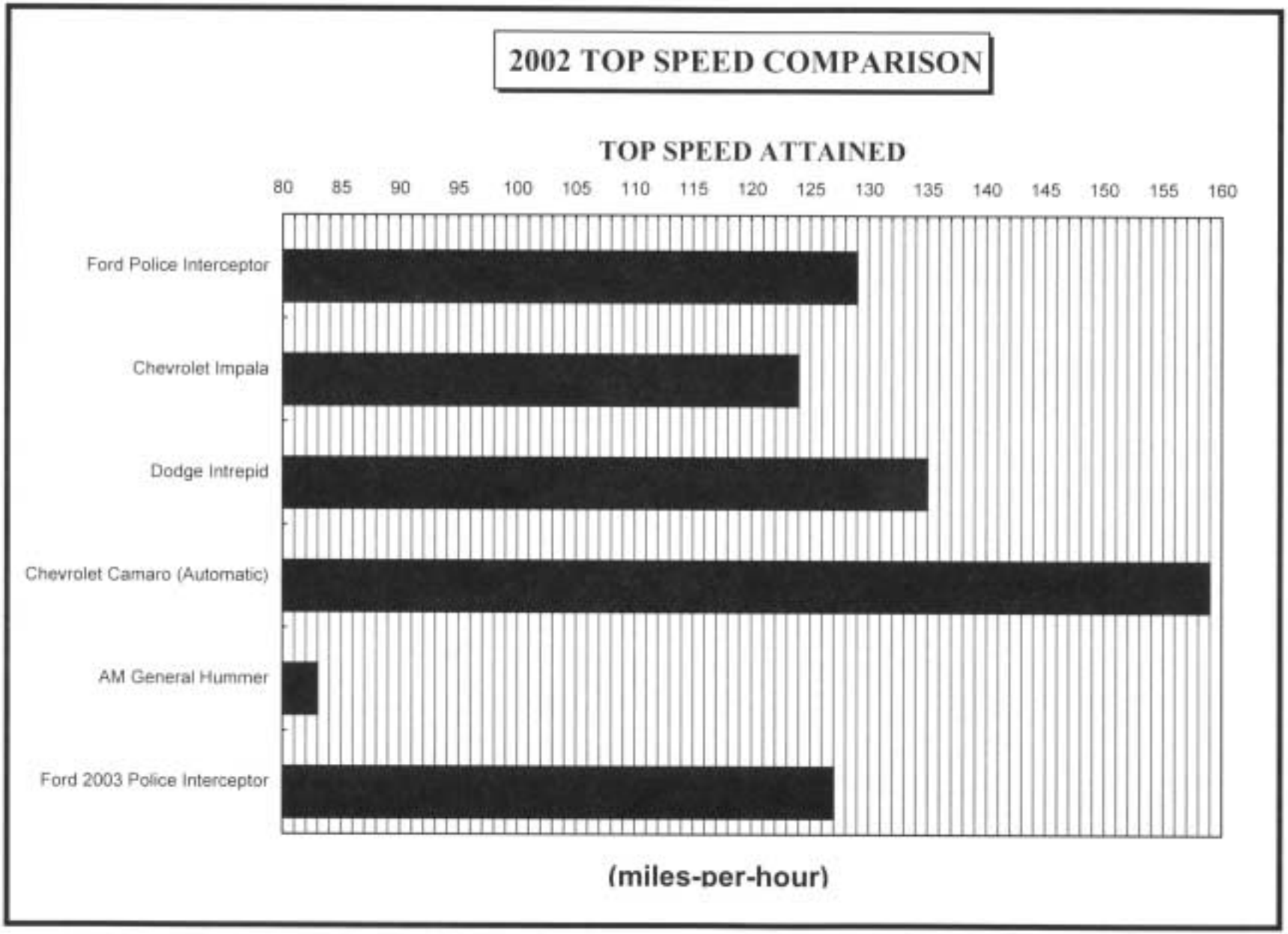
SUMMARY OF ACCELERATION, TOP SPEED, AND BRAKE TESTING

ACCELERATION*		Chevrolet Camaro 5.7L SPFI	AM General Hummer 6.5L Turbo Diesel	Ford 2003 Police Interceptor 4.6L SPFI
0 – 20 mph	(sec.)	1.57	2.87	1.99
0 – 30 mph	(sec.)	2.42	5.41	3.29
0 – 40 mph	(sec.)	3.29	8.82	4.70
0 – 50 mph	(sec.)	4.34	13.65	6.58
0 – 60 mph	(sec.)	5.69	20.03	8.84
0 – 70 mph	(sec.)	7.10	30.36	11.28
0 – 80 mph	(sec.)	8.75	56.25	14.29
0 – 90 mph	(sec.)	10.94	N/A	18.74
0 – 100 mph	(sec.)	13.48	N/A	23.83
TOP SPEED	(mph)	159**	83**	127**
DISTANCE TO REACH				
110 mph	(miles)	.31	N/A	.64
120 mph	(miles)	.42	N/A	1.00
QUARTER MILE				
Time	(sec.)	14.14	21.90	16.72
Speed	(miles)	102.48	62.40	85.80
		ABS	**ABS**	**ABS**
BRAKING – PHASE I				
Average Deceleration Rate	(ft/s^2)	26.79	22.39	25.16
BRAKING – PHASE II				
Average Deceleration Rate	(ft/s^2)	28.23	22.17	24.91
BRAKING – FINAL SCORE * **				
Deceleration Rate	**(ft/s^2)**	**27.51**	**22.28**	**25.03**
Projected Stopping Distance from 60 mph	(feet)	140.8	173.8	154.7

*Four run average.
**Vehicle equipped with an electronic speed limiter.
***See individual brake testing pages for the Michigan State Police minimum requirements.
N/A: Vehicle did not achieve or exceed speeds of 100 mph.



Note: The Hummer acceleration time was 56.25 seconds.


2002 TOP SPEED COMPARISON
TOP SPEED ATTAINED
80
85
90
95
100
105
110
115
120
125
130
135
140
145
150
155
160
Ford Police Interceptor
Chevrolet Impala
Dodge Intrepid
Chevrolet Camaro (Automatic)
AM General Hummer
Ford 2003 Police Interceptor
(miles-per-hour)

ACCELERATION AND TOP SPEED TESTS

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

MAKE & MODEL: Ford Police Interceptor 4.6L SPFI **BEGINNING TIME:** 10:12 a.m.

WIND VELOCITY: 1.6 mph **WIND DIRECTION:** 031° **TEMPERATURE:** 52.9°

ACCELERATION

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.6 sec.**	8.49	8.43	8.41	8.36	**8.42**
0 – 80	**16.4 sec.**	13.81	13.75	13.68	13.82	**13.77**
0 – 100	**27.1 sec.**	23.61	23.32	23.10	23.31	**23.34**

DISTANCE TO REACH: 110 MPH .62 mile **120 MPH** .99 mile

TOP SPEED ATTAINED: 129 mph

MAKE & MODEL: Chevrolet Impala 3.8L SPFI **BEGINNING TIME:** 10:36 a.m.

WIND VELOCITY: 2.8 mph **WIND DIRECTION:** 054° **TEMPERATURE:** 54.2°

ACCELERATION

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.7 sec.**	9.29	9.25	9.15	9.15	**9.21**
0 – 80	**16.7 sec.**	15.56	15.50	15.26	15.44	**15.44**
0 – 100	**27.4 sec.**	26.62	26.31	25.95	26.20	**26.27**

DISTANCE TO REACH: 110 MPH .72 mile **120 MPH** 1.92 mile

TOP SPEED ATTAINED: 124 mph

*Michigan State Police minimum requirement.

ACCELERATION AND TOP SPEED TESTS

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

MAKE & MODEL: Dodge Intrepid 3.5L SPFI **BEGINNING TIME:** 10:58 a.m.

WIND VELOCITY: 5.9 mph **WIND DIRECTION:** 046° **TEMPERATURE:** 56.1°

ACCELERATION

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.7 sec.**	8.81	8.74	8.66	8.68	**8.72**
0 – 80	**16.7 sec.**	14.29	14.49	14.35	14.27	**14.35**
0 – 100	**27.4 sec.**	24.27	24.49	23.93	24.39	**24.27**

DISTANCE TO REACH: 110 MPH .66 mile **120 MPH** .97 mile

TOP SPEED ATTAINED: 135 mph

MAKE & MODEL: Chevrolet Camaro 5.7L SPFI (Automatic) **BEGINNING TIME:** 9:41 a.m.

WIND VELOCITY: 2.7 mph **WIND DIRECTION:** 358° **TEMPERATURE:** 50.7°

ACCELERATION

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**7.4 sec.**	5.68	5.72	5.71	5.63	**5.69**
0 – 80	**12.1 sec.**	8.74	8.83	8.73	8.71	**8.75**
0 – 100	**19.8 sec.**	13.40	13.60	13.44	13.49	**13.48**

DISTANCE TO REACH: 110 MPH .31 mile **120 MPH** .42 mile

TOP SPEED ATTAINED: 159 mph

*Michigan State Police minimum requirement.

ACCELERATION AND TOP SPEED TESTS

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

MAKE & MODEL: AM General Hummer 6.5L Turbo Diesel **BEGINNING TIME:** 9:03 a.m.

WIND VELOCITY: 4.6 mph **WIND DIRECTION:** 345° **TEMPERATURE:** 49.0°

ACCELERATION

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**N/A**	19.33	20.33	19.96	20.50	**20.03**
0 – 80	**N/A**	51.71	58.64	56.48	58.15	**56.25**
0 – 100	**N/A**	N/A	N/A	N/A	N/A	**N/A**

DISTANCE TO REACH: 110 MPH N/A **120 MPH** N/A

TOP SPEED ATTAINED: 83 mph

MAKE & MODEL: Ford 2003 Police Interceptor 4.6L SPFI **BEGINNING TIME:** 11:20 a.m.

WIND VELOCITY: 6.2 mph **WIND DIRECTION:** 045° **TEMPERATURE:** 56.9°

ACCELERATION

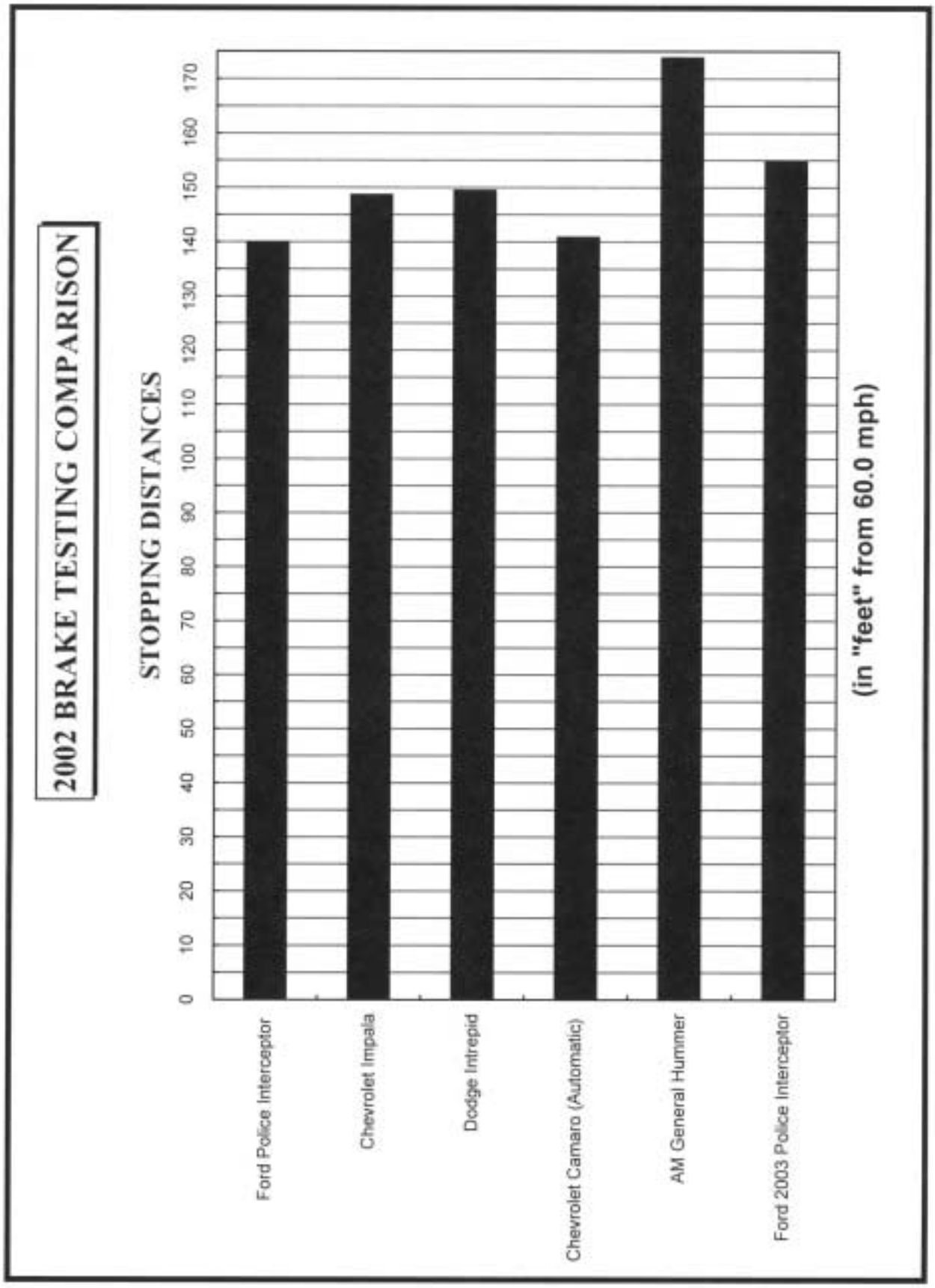
SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.6 sec.**	8.78	8.85	8.79	8.95	**8.84**
0 – 80	**16.4 sec.**	14.22	14.38	14.12	14.44	**14.29**
0 – 100	**27.1 sec.**	23.58	24.13	23.52	24.07	**23.83**

DISTANCE TO REACH: 110 MPH .64 mile **120 MPH** 1.00 mile

TOP SPEED ATTAINED: 127 mph

*Michigan State Police minimum requirement.

BRAKE TESTING (CONTINUED)


2002 BRAKE TESTING COMPARISON
STOPPING DISTANCES
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
Ford Police Interceptor
Chevrolet Impala
Dodge Intrepid
Chevrolet Camaro (Automatic)
AM General Hummer
Ford 2003 Police Interceptor
(in "feet" from 60.0 mph)

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 10:36 a.m. **TEMPERATURE:** 54.2°F

MAKE and MODEL: Ford 2002 Police Interceptor 4.6L **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	59.7 mph	138.9 feet	27.60 ft/s^2
Stop #2	61.1 mph	147.9 feet	27.15 ft/s^2
Stop #3	60.5 mph	138.6 feet	28.41 ft/s^2
Stop #4	60.9 mph	140.3 feet	28.43 ft/s^2
Stop #5	60.6 mph	142.3 feet	27.76 ft/s^2
Stop #6	----- mph	------- feet	------- ft/s^2

AVERAGE DECELERATION RATE (Best 5 of 6 stops Phase I): 27.87 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	60.3 mph	140.9 feet	27.76 ft/s^2
Stop #2	59.6 mph	136.7 feet	27.95 ft/s^2
Stop #3	----- mph	------- feet	------- ft/s^2
Stop #4	60.9 mph	146.3 feet	27.27 ft/s^2
Stop #5	60.2 mph	144.7 feet	26.94 ft/s^2
Stop #6	60.4 mph	142.9 feet	27.46 ft/s^2

AVERAGE DECELERATION RATE (Best 5 of 6 stops Phase II): 27.47 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 27.67 ft/s^2

Michigan State Police minimum requirement – 25.87 ft/s^2

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 10:58 a.m. **TEMPERATURE:** 56.1°F

MAKE and MODEL: Chevrolet Impala 3.8L **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	60.6 mph	149.9 feet	26.35 ft/s^2
Stop #2	60.3 mph	153.5 feet	25.48 ft/s^2
Stop #3	60.2 mph	151.2 feet	25.78 ft/s^2
Stop #4	60.9 mph	166.0 feet	24.03 ft/s^2
Stop #5	60.6 mph	149.8 feet	26.37 ft/s^2
Stop #6	----- mph	------- feet	------- ft/s^2

AVERAGE DECELERATION RATE (Best 5 of 6 stops Phase I): 25.60 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	60.3 mph	147.3 feet	26.55 ft/s^2
Stop #2	----- mph	------- feet	------- ft/s^2
Stop #3	60.1 mph	148.0 feet	26.25 ft/s^2
Stop #4	60.7 mph	153.3 feet	25.85 ft/s^2
Stop #5	60.4 mph	148.2 feet	26.48 ft/s^2
Stop #6	60.6 mph	143.7 feet	27.49 ft/s^2

AVERAGE DECELERATION RATE (Best 5 of 6 stops Phase II): 26.52 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 26.06 ft/s^2

Michigan State Police minimum requirement – 25.96 ft/s^2

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 11:20 a.m. **TEMPERATURE:** 56.9°F

MAKE and MODEL: Dodge Intrepid 3.5L **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	61.0 mph	148.4 feet	26.97 ft/s^2
Stop #2	60.9 mph	161.4 feet	24.72 ft/s^2
Stop #3	60.5 mph	157.0 feet	25.08 ft/s^2
Stop #4	60.4 mph	158.7 feet	24.73 ft/s^2
Stop #5	60.7 mph	158.5 feet	25.00 ft/s^2
Stop #6	----- mph	------- feet	------- ft/s^2

AVERAGE DECELERATION RATE (Best 5 of 6 stops Phase I): 25.30 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	----- mph	------- feet	------- ft/s^2
Stop #2	61.2 mph	144.6 feet	27.86 ft/s^2
Stop #3	60.4 mph	145.6 feet	26.95 ft/s^2
Stop #4	60.7 mph	144.8 feet	27.37 ft/s^2
Stop #5	60.5 mph	156.4 feet	25.17 ft/s^2
Stop #6	60.5 mph	155.2 feet	25.37 ft/s^2

AVERAGE DECELERATION RATE (Best 5 of 6 stops Phase II): 26.54 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 25.92 ft/s^2

Michigan State Police minimum requirement – 25.96 ft/s^2

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 10:12 a.m. **TEMPERATURE:** 52.9°F

MAKE and MODEL: Chevrolet Camaro 5.7L **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	60.7 mph	151.6 feet	26.14 ft/s^2
Stop #2	----- mph	------- feet	------- ft/s^2
Stop #3	60.4 mph	146.5 feet	26.78 ft/s^2
Stop #4	60.5 mph	146.8 feet	26.82 ft/s^2
Stop #5	60.5 mph	147.9 feet	26.62 ft/s^2
Stop #6	60.4 mph	142.3 feet	27.58 ft/s^2

AVERAGE DECELERATION RATE (Best 5 of 6 stops Phase I): 26.79 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	60.6 mph	138.2 feet	28.58 ft/s^2
Stop #2	60.4 mph	140.6 feet	27.91 ft/s^2
Stop #3	----- mph	------- feet	------- ft/s^2
Stop #4	60.9 mph	143.0 feet	27.90 ft/s^2
Stop #5	60.6 mph	139.1 feet	28.40 ft/s^2
Stop #6	61.0 mph	141.0 feet	28.39 ft/s^2

AVERAGE DECELERATION RATE (Best 5 of 6 stops Phase II): 28.23 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 27.51 ft/s^2

Michigan State Police minimum requirement – 26.05 ft/s^2

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 09:41 a.m. **TEMPERATURE:** 50.7°F

MAKE and MODEL: AM General Hummer 6.5L **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	61.5 mph	175.6 feet	23.17 ft/s^2
Stop #2	61.0 mph	182.7 feet	21.91 ft/s^2
Stop #3	----- mph	------- feet	------- ft/s^2
Stop #4	60.3 mph	175.7 feet	22.26 ft/s^2
Stop #5	61.7 mph	184.2 feet	22.23 ft/s^2
Stop #6	60.7 mph	177.0 feet	22.39 ft/s^2

AVERAGE DECELERATION RATE (Best 5 of 6 stops Phase I): 22.39 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	61.0 mph	180.3 feet	22.20 ft/s^2
Stop #2	60.6 mph	181.8 feet	21.73 ft/s^2
Stop #3	----- mph	------- feet	------- ft/s^2
Stop #4	60.8 mph	180.1 feet	22.08 ft/s^2
Stop #5	60.7 mph	180.9 feet	21.91 ft/s^2
Stop #6	60.6 mph	172.3 feet	22.93 ft/s^2

AVERAGE DECELERATION RATE (Best 5 of 6 stops Phase II): 22.17 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 22.28 ft/s^2

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 12:41 a.m. **TEMPERATURE:** 62.1°F

MAKE and MODEL: Ford 2003 Police Interceptor 4.6L **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	61.0 mph	165.6 feet	24.17 ft/s^2
Stop #2	----- mph	------- feet	------- ft/s^2
Stop #3	59.5 mph	159.7 feet	23.84 ft/s^2
Stop #4	60.5 mph	153.3 feet	25.68 ft/s^2
Stop #5	60.2 mph	150.9 feet	25.83 ft/s^2
Stop #6	60.2 mph	148.4 feet	26.27 ft/s^2

AVERAGE DECELERATION RATE (Best 5 of 6 stops Phase I): 25.16 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	60.9 mph	167.1 feet	23.87 ft/s^2
Stop #2	60.6 mph	153.4 feet	25.75 ft/s^2
Stop #3	60.8 mph	171.2 feet	23.23 ft/s^2
Stop #4	----- mph	------- feet	------- ft/s^2
Stop #5	60.6 mph	153.8 feet	25.68 ft/s^2
Stop #6	61.1 mph	154.4 feet	26.01 ft/s^2

AVERAGE DECELERATION RATE (Best 5 of 6 stops Phase II): 24.91 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 25.03 ft/s^2

Michigan State Police minimum requirement – 25.87 ft/s^2

ERGONOMICS AND COMMUNICATIONS EVALUATION

ERGONOMICS AND COMMUNICATIONS

TEST OBJECTIVE

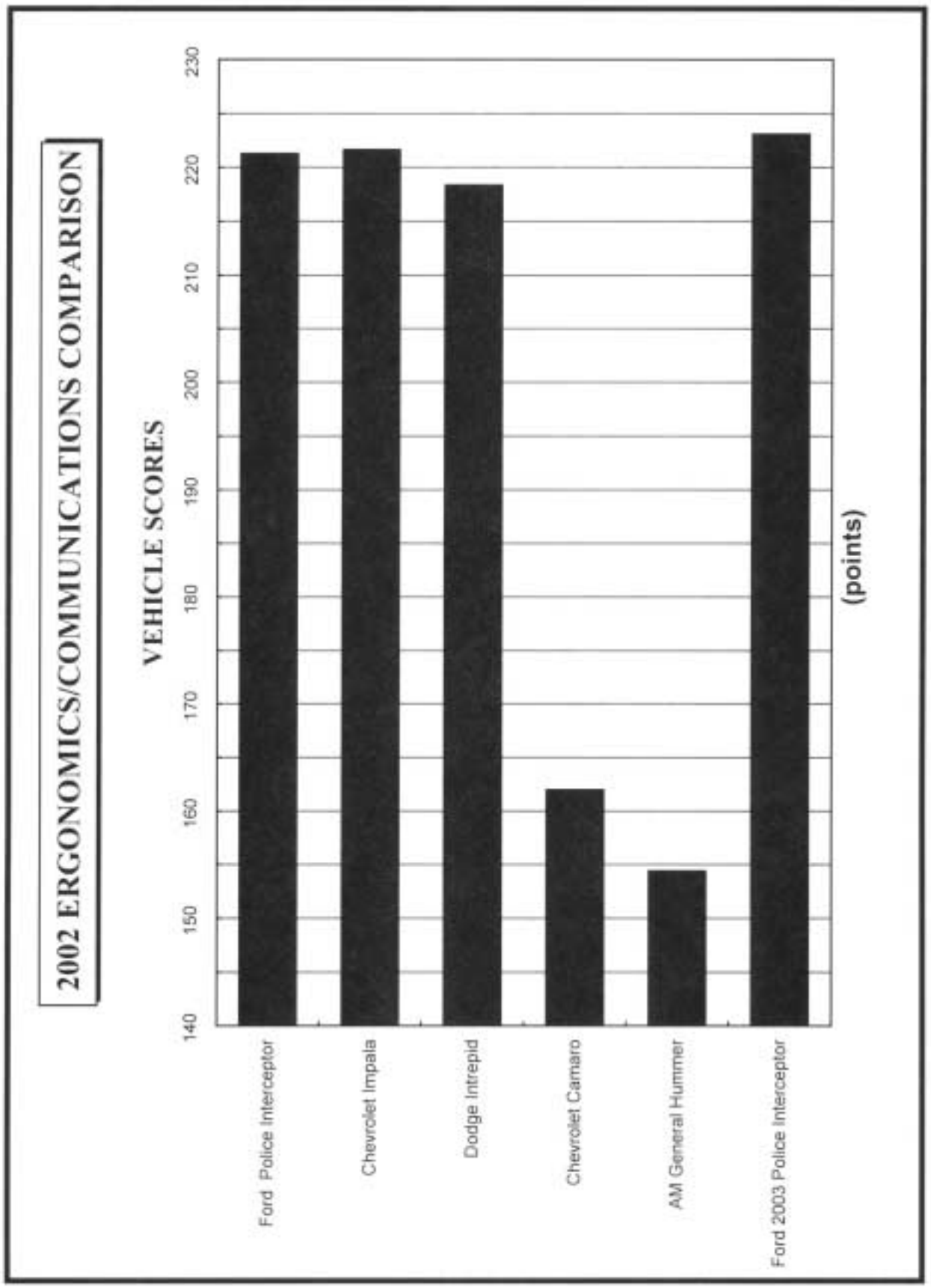
Rate each test vehicle's ability to:

1. Provide a suitable environment for the patrol officer in the performance of his/her assigned tasks.

2. Accommodate the required communications and emergency warning equipment and assess the relative difficulty of such installations.

TEST METHODOLOGY

Utilizing the ergonomics portion of the form, a minimum of four officers (in this case 10) will individually and independently compare and score each test vehicle on the various comfort, instrumentation, and visibility items. The installation and communications portion of the evaluation will be conducted by personnel from the Michigan State Police Communications Division and Vehicle and Travel Services, based upon the relative difficulty of the necessary installations. Each factor will be graded on a 1 to 10 scale, with 1 representing "totally unacceptable," 5 representing "average," and 10 representing "superior." The scores will be averaged to minimize personal prejudice for or against any given vehicle.


2002 ERGONOMICS/COMMUNICATIONS COMPARISON
VEHICLE SCORES
140
150
160
170
180
190
200
210
220
230
(points)
Ford Police Interceptor
Chevrolet Impala
Dodge Intrepid
Chevrolet Camaro
AM General Hummer
Ford 2003 Police Interceptor

ERGONOMICS AND COMMUNICATIONS

ERGONOMICS	Ford 2002 Police Interceptor	Chevrolet Impala	Dodge Intrepid
FRONT SEAT			
Padding	7.10	8.40	7.90
Depth of Bucket Seat	7.40	7.50	7.10
Adjustability – Front to Rear	8.30	8.20	8.20
Upholstery	7.20	7.70	7.40
Bucket Seat Design	6.90	8.10	7.60
Headroom	7.60	8.00	7.80
Seatbelts	8.10	8.20	8.20
Ease of Entry and Exit	8.10	7.80	7.60
Overall Comfort Rating	7.90	8.00	8.00
REAR SEAT			
Leg room – Front seat back	7.60	7.20	8.10
Ease of Entry and Exit	7.40	6.80	7.50
INSTRUMENTATION			
Clarity	8.60	8.40	8.90
Placement	8.70	8.40	8.90
VEHICLE CONTROLS			
Pedals, Size and Position	8.50	8.60	7.70
Power Window Switch	8.50	8.30	8.50
Inside Door Lock Switch	8.20	8.00	8.60
Automatic Door Lock Switch	8.40	7.70	7.40
Outside Mirror Controls	7.70	7.80	7.22
Steering Wheel, Size, Tilt Release, and Surface	8.60	8.30	8.20
Heat/AC Vent Placement and Adjustability	8.50	8.20	8.00
VISIBILITY			
Front (Windshield)	8.70	8.90	8.40
Rear (Back Window)	7.30	7.20	7.20
Left Rear Quarter	7.40	7.40	6.90
Right Rear Quarter	7.40	7.50	6.60
Outside Rear View Mirrors	7.00	7.20	5.90
COMMUNICATIONS			
Dashboard Accessibility	8.00	7.40	8.13
Trunk Accessibility	8.33	8.44	8.56
Engine Compartment	7.83	8.00	7.83
TOTAL SCORES	**221.26**	**221.64**	**218.34**

ERGONOMICS AND COMMUNICATIONS

ERGONOMICS	Chevrolet Camaro	AM General Hummer	Ford 2003 Police Interceptor
FRONT SEAT			
Padding	5.80	5.20	7.50
Depth of Bucket Seat	5.20	5.50	7.60
Adjustability – Front to Rear	5.90	5.70	8.50
Upholstery	6.40	6.70	7.10
Bucket Seat Design	6.10	5.80	7.40
Headroom	4.90	9.30	7.70
Seatbelts	5.70	6.00	8.20
Ease of Entry and Exit	3.40	3.50	8.10
Overall Comfort Rating	4.80	5.22	8.10
REAR SEAT			
Leg room – Front seat back	2.00	4.30	7.78
Ease of Entry and Exit	1.50	3.10	7.44
INSTRUMENTATION			
Clarity	7.50	5.40	8.60
Placement	8.00	5.70	8.70
VEHICLE CONTROLS			
Pedals, Size and Position	7.40	7.30	8.80
Power Window Switch	7.60	5.80	8.50
Inside Door Lock Switch	8.50	5.40	7.90
Automatic Door Lock Switch	7.70	5.70	8.30
Outside Mirror Controls	6.70	3.90	7.90
Steering Wheel, Size, Tilt Release, and Surface	8.20	4.30	8.60
Heat/AC Vent Placement and Adjustability	7.78	6.90	8.40
VISIBILITY			
Front (Windshield)	6.30	6.80	8.70
Rear (Back Window)	4.70	3.50	7.30
Left Rear Quarter	4.70	4.80	7.40
Right Rear Quarter	4.80	4.60	7.40
Outside Rear View Mirrors	4.40	6.00	7.00
COMMUNICATIONS			
Dashboard Accessibility	5.33	6.20	8.00
Trunk Accessibility	4.00	6.11	8.33
Engine Compartment	6.67	5.67	7.83
TOTAL SCORES	**161.98**	**154.40**	**223.08**

FUEL ECONOMY EVALUATION

FUEL ECONOMY

TEST OBJECTIVE

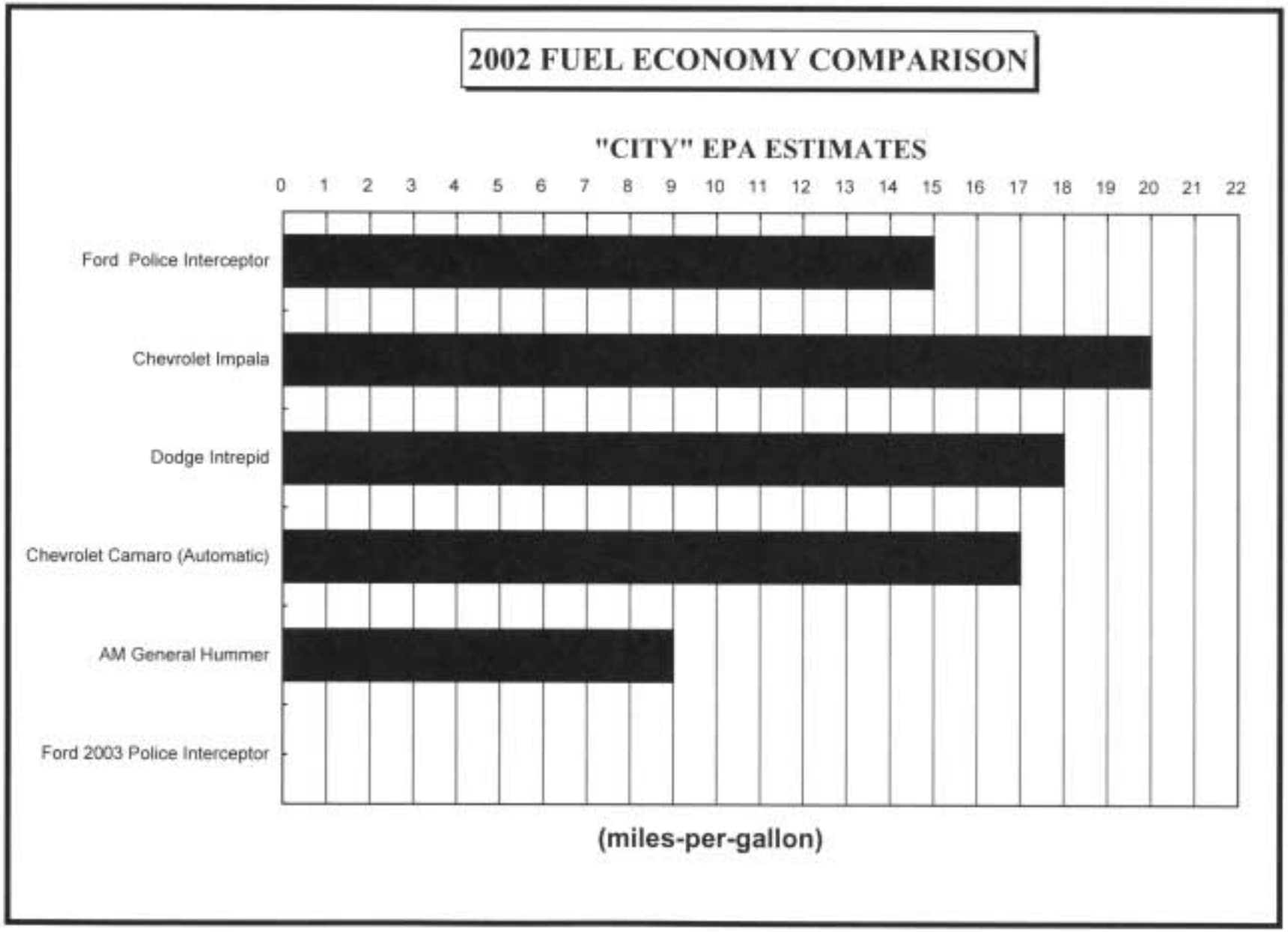
Determine the fuel economy potential of all vehicles being evaluated. The data used for scoring are both valid and reliable in a comparison sense, while not necessarily being an accurate predictor of actual fuel economy in police patrol service.

TEST METHODOLOGY

The vehicles will be scored based on estimates for city fuel economy to the nearest 1/10th mile per gallon (mpg) developed from data supplied by the vehicle manufacturer and certified by the Environmental Protection Agency.

Vehicles Make/Model/Engine		E.P.A. Miles Per Gallon		
		City*	Highway	Combined
Ford 2002 Police Interceptor	4.6 L SPFI	15 (15.5)	22	18
Chevrolet Impala	3.8L SPFI	20 (19.5)	29	23
Dodge Intrepid	3.5L SPFI	18 (18.0)	26	21
Chevrolet Camaro	5.7L SPFI (Automatic)	17 (16.6)	27	20
AM General Hummer	6.5L (Turbo Diesel)	9 (9.0)	10	9**
Ford 2003 Police Interceptor	4.6L SPFI	TBD	TBD	TBD

*Scored on city mileage only to the nearest 1/10 mpg.
**Class III vehicle – not tested to normal EPA requirements.
TBD: Not available until March 2002.



Note: The 2003 Police Interceptor EPA estimates not available until March 2002.

MICHIGAN STATE POLICE
SCORING AND BID ADJUSTMENT METHODOLOGY*

STEP I: RAW SCORES

Raw scores are developed, through testing, for each vehicle in each of six evaluation categories. The raw scores are expressed in terms of seconds, feet per second^2, miles-per-hour, points, and miles-per-gallon.

VEHICLE DYNAM. (seconds)	ACCEL. (seconds)	BRAKING RATE (ft/sec^2)	TOP SPEED (mph)	ERGONOMICS & COMMUN. (points)	FUEL ECONOMY (mpg)
92.210	45.790	26.380	115.000	173.900	14.300

STEP II: DEVIATION FACTOR

In each evaluation category, the best scoring vehicle's score is used as the benchmark against which each of the other vehicles' scores are compared. (In the Vehicle Dynamics and Acceleration categories the lowest score is best, while in the remainder of the categories the highest score is best.) The best scoring vehicle in a given category received a deviation factor of "0." The "deviation factor" is then calculated by determining the absolute difference between each vehicle's raw score and the best score in that category. The absolute difference is then divided by the best score, with the result being the "deviation factor."

CAR MAKE MODEL	TOP SPEED
CAR "A"	115.000 **.042**
CAR "B"	118.800 **.010**
CAR "C"	117.900 **.018**
CAR "D"	120.000 **0**

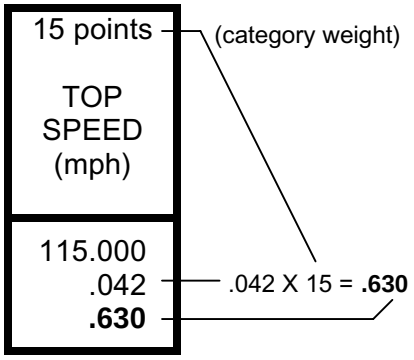
EXAMPLE:

Best Score (Car "D")		Other Vehicle Score (Car "A")		Absolute Best Difference		Deviation Factor Score		(Car "A")
120.000	-	115.000	=	5	/	120.000	=	**.042**

STEP III: WEIGHTED CATEGORY SCORE

Each vehicle's weighted category score is determined by multiplying the deviation factor (as determined in Step II) by the category weight.

RAW SCORE
DEVIATION FACTOR
WEIGHTED CATEGORY SCORE



*All mathematical computations are to be rounded to the third decimal place.

STEP IV: TOTAL WEIGHTED SCORE

Adding together the six (6) weighted category scores for that vehicle derives the total weighted score for each vehicle.

EXAMPLE:

CAR	30 pts. VEH. DYN. (seconds)	20 pts. ACCEL. (seconds)	20 pts. BRAKE DECEL. (ft/sec^2)	15 pts. TOP SPEED (mph)	10 pts. ERGO/ COMM. (points)	5 pts. FULE ECON. (mpg)	TOTAL WEIGHTED SCORE
Car "A"	92.210 .018 .540	45.790 .163 3.260	26.380 0 0	115.000 .042 .630	173.900 .184 1.840	14.300 0 0	**6.270**

STEP V: BID ADJUSTMENT FIGURE

The bid adjustment figure that we have chosen to use is one percent (1%) of the lowest bid price received. As an example, in this and the following two steps, the lowest bid price received was $15,238.00, which results in a bid adjustment figure of **$152.38**.

STEP VI: ACTUAL DOLLAR ADJUSTMENT

The actual dollar adjustment for a vehicle is determined by multiplying that vehicle's total weighted score by the bid adjustment figure as shown at right.

TOTAL WTD. SCORE	BID ADJ. FIGURE	ACTUAL DOLLAR ADJ.
	X	**=**
6.270	$152.38	**$955.42**

STEP VII: ADJUSTED BID PRICE

The actual dollar adjustment amount arrived at for each vehicle is added to that vehicle's bid price. Provided other necessary approvals are received, the vehicle with the lowest adjusted bid price will be the vehicle purchased. (The amount paid for the purchased vehicles will be the actual bid price.)

ACTUAL DOLLAR ADJ.	ACTUAL BID PRICE	ADJ. BID PRICE
	+	**=**
$955.42	$15,473.00	**$16,428.42**

APPENDIX I
PERFORMANCE COMPARISONS OF 2001 AND 2002 TEST VEHICLES

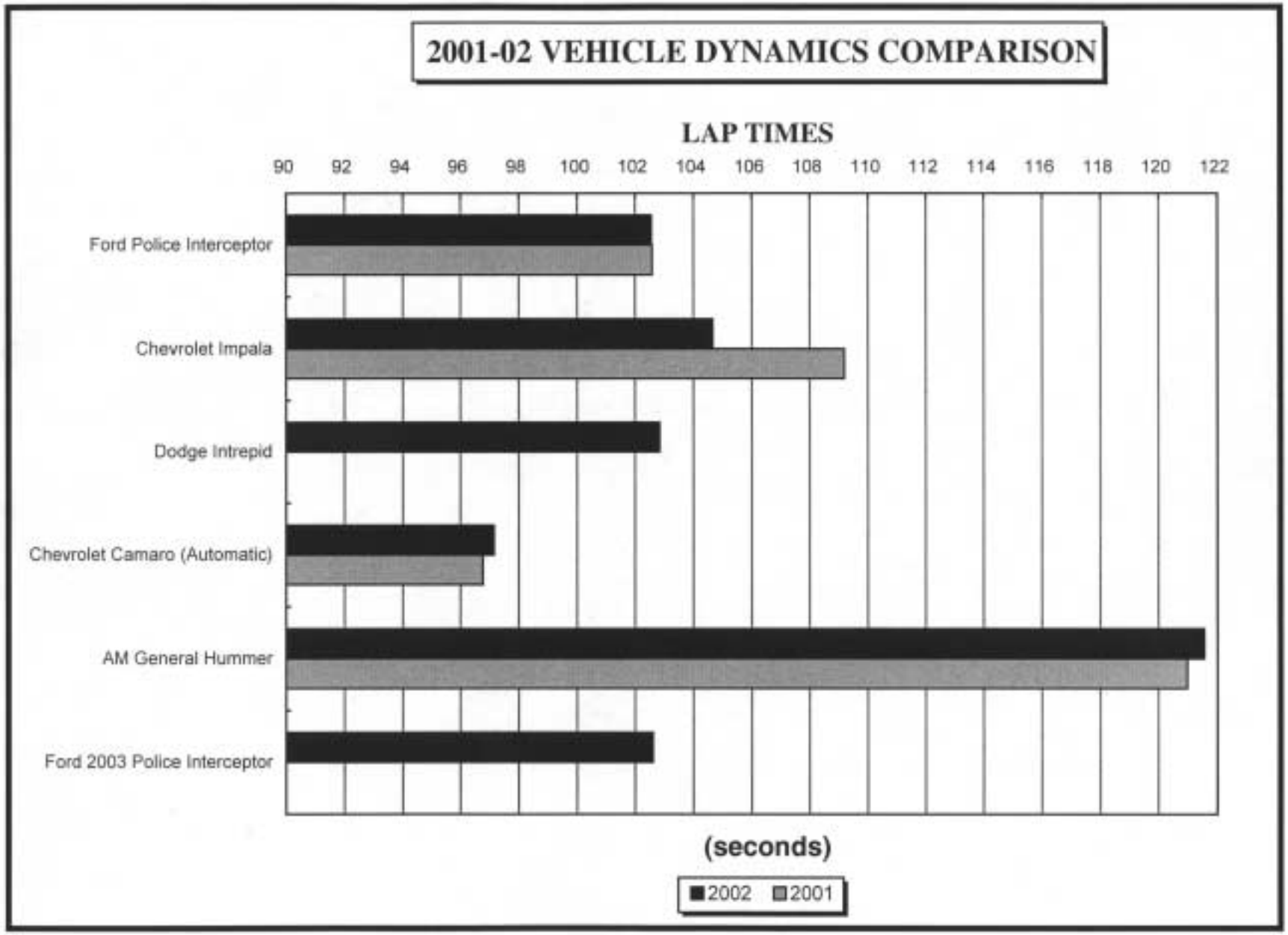
The following charts illustrate the scores achieved by each make and model of vehicle tested for model years 2001 and 2002. The charts presented are for the following performance categories:

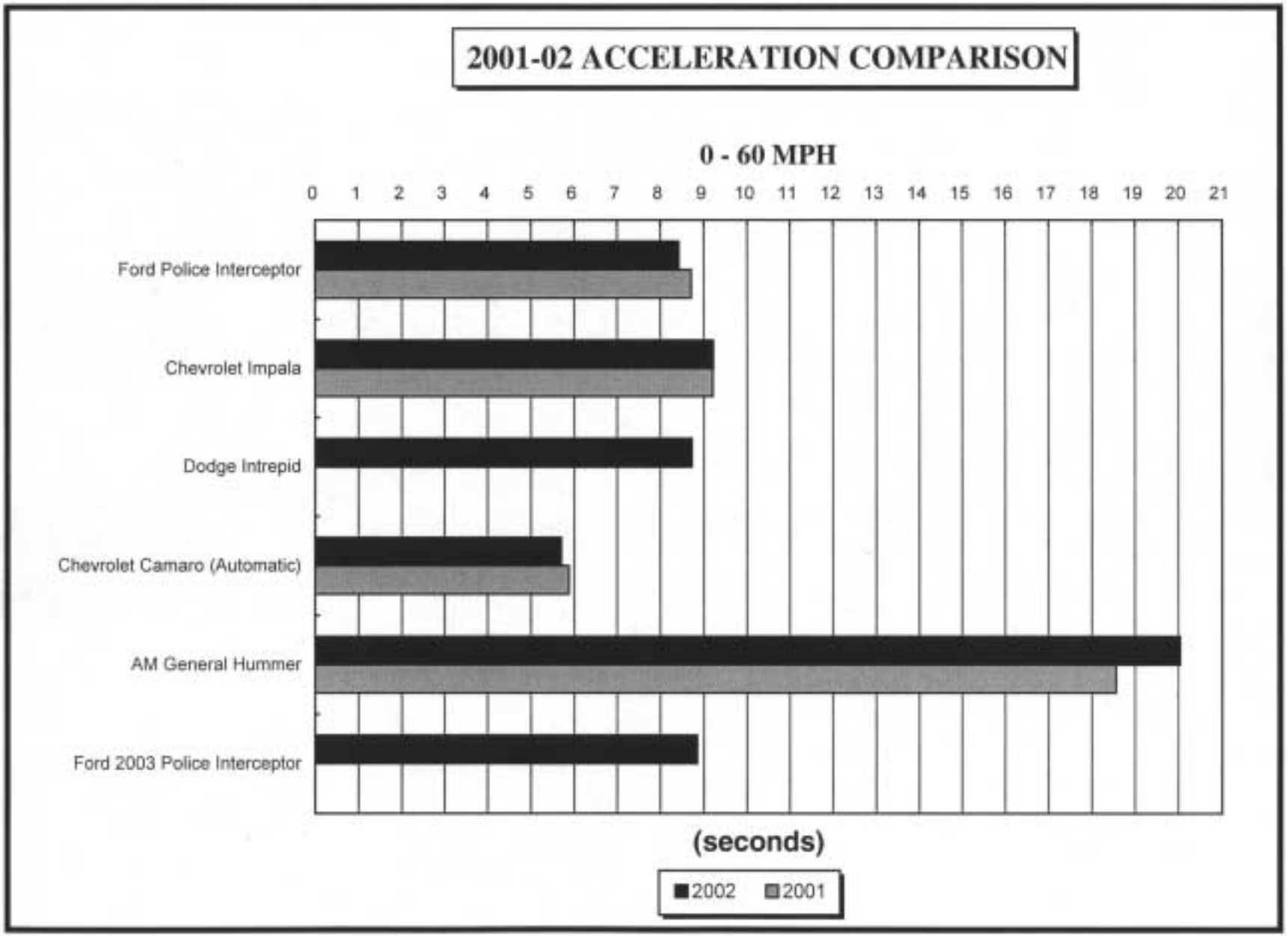
Vehicle Dynamics
Acceleration 0 – 60 mph
Acceleration 0 – 80 mph
Acceleration 0 – 100 mph
Top Speed
Braking (Calculated 60 – 0 mph Stopping Distance)

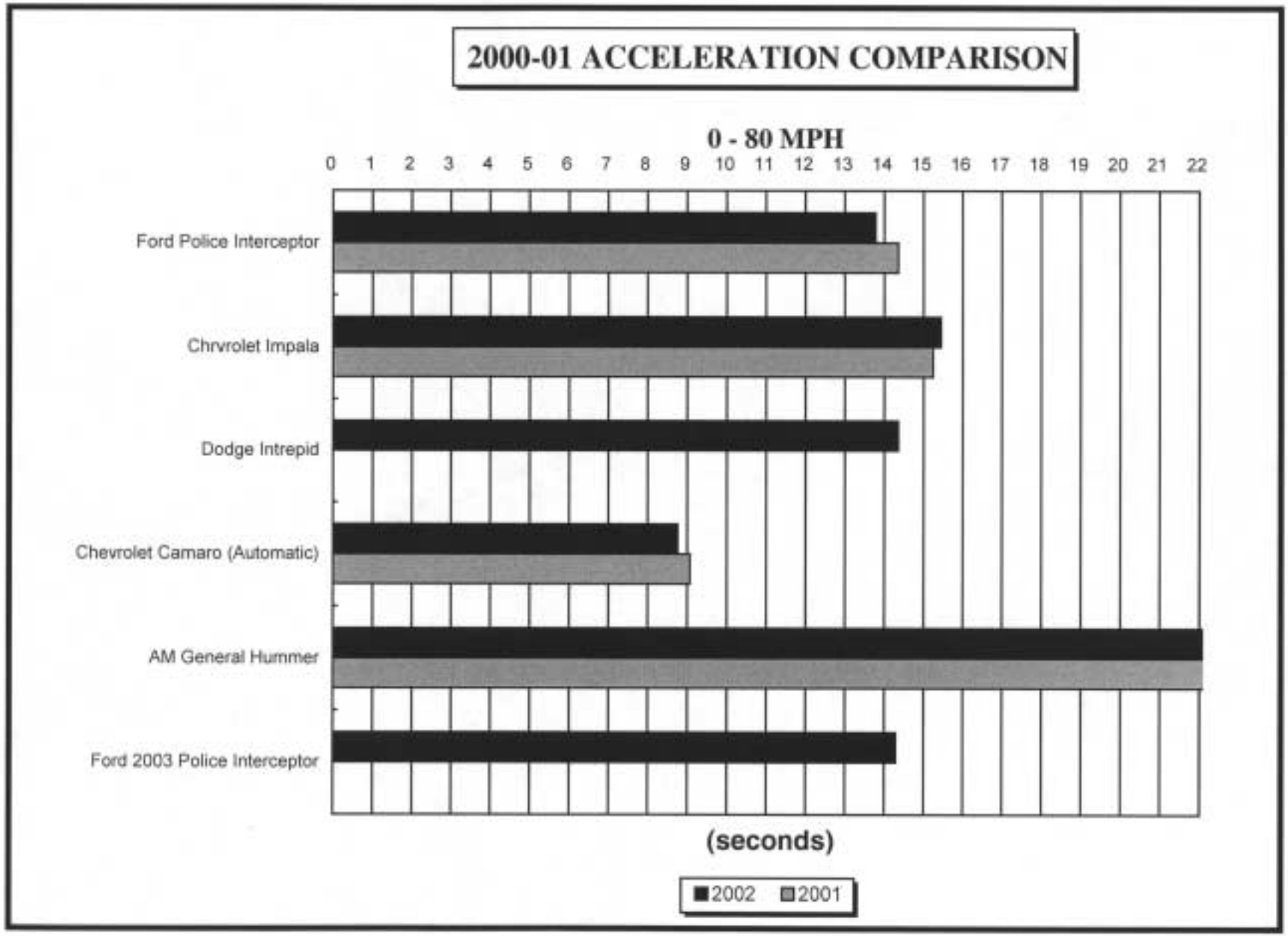
The reader should bear in mind the following information regarding variables when reviewing the 2001 – 2002 performance comparison charts in Appendix I. While as many variables as possible are eliminated from a given year's testing, those that occur over the span of a full year are sometimes impossible to eliminate.

The acceleration, top speed, and brake testing of both the 2001 and 2002 model year vehicles were conducted in the latter half of September. Temperatures on the test day in September of 2000 ranged between 40° F at the start of testing to a high of approximately 62° F during the afternoon. Temperatures during the testing this year varied, ranging between 49° F when testing started, to an afternoon high of 66° F. Such things as temperature, humidity, and barometric pressure affect the performance of internal combustion engines and brake components, and may cause minor differences from one year's evaluation to the next.

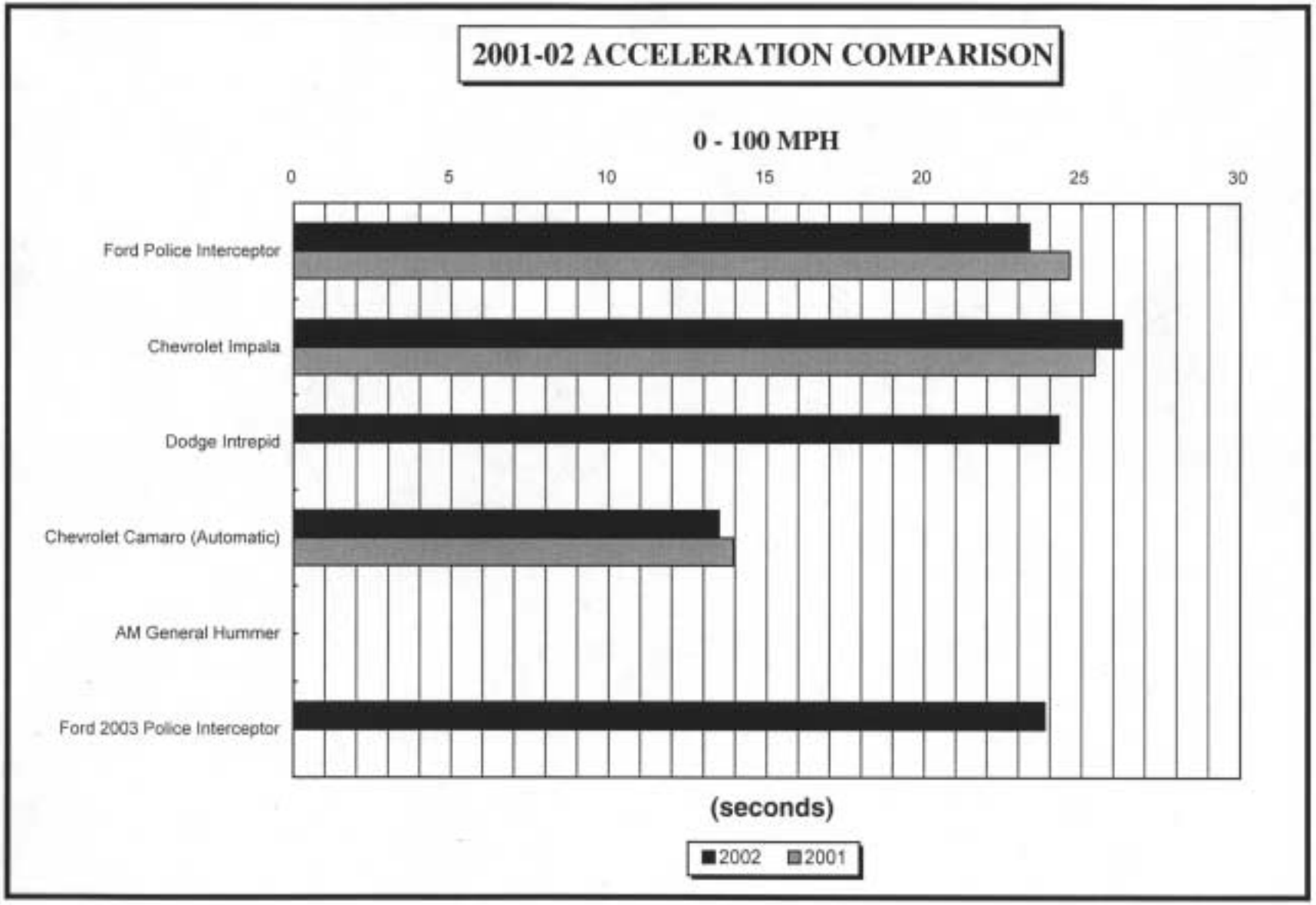
Another factor to be considered is the individual differences between two cars of the same make and model. The test cars that we evaluate are representative of their given make and model. Other cars of the same make and model will not, however, be exactly the same, particularly when it comes to performance. (It is well known that two consecutive cars off the same assembly line will perform slightly differently from each other.) Minor differences in performance from year to year within the same make and model are not only possible, but are to be expected.


2001-02 VEHICLE DYNAMICS COMPARISON
LAP TIMES
90
92
94
96
98
100
102
104
106
108
110
112
114
116
118
120
122
Ford Police Interceptor
Chevrolet Impala
Dodge Intrepid
Chevrolet Camaro (Automatic)
AM General Hummer
Ford 2003 Police Interceptor
(seconds)
2002
2001

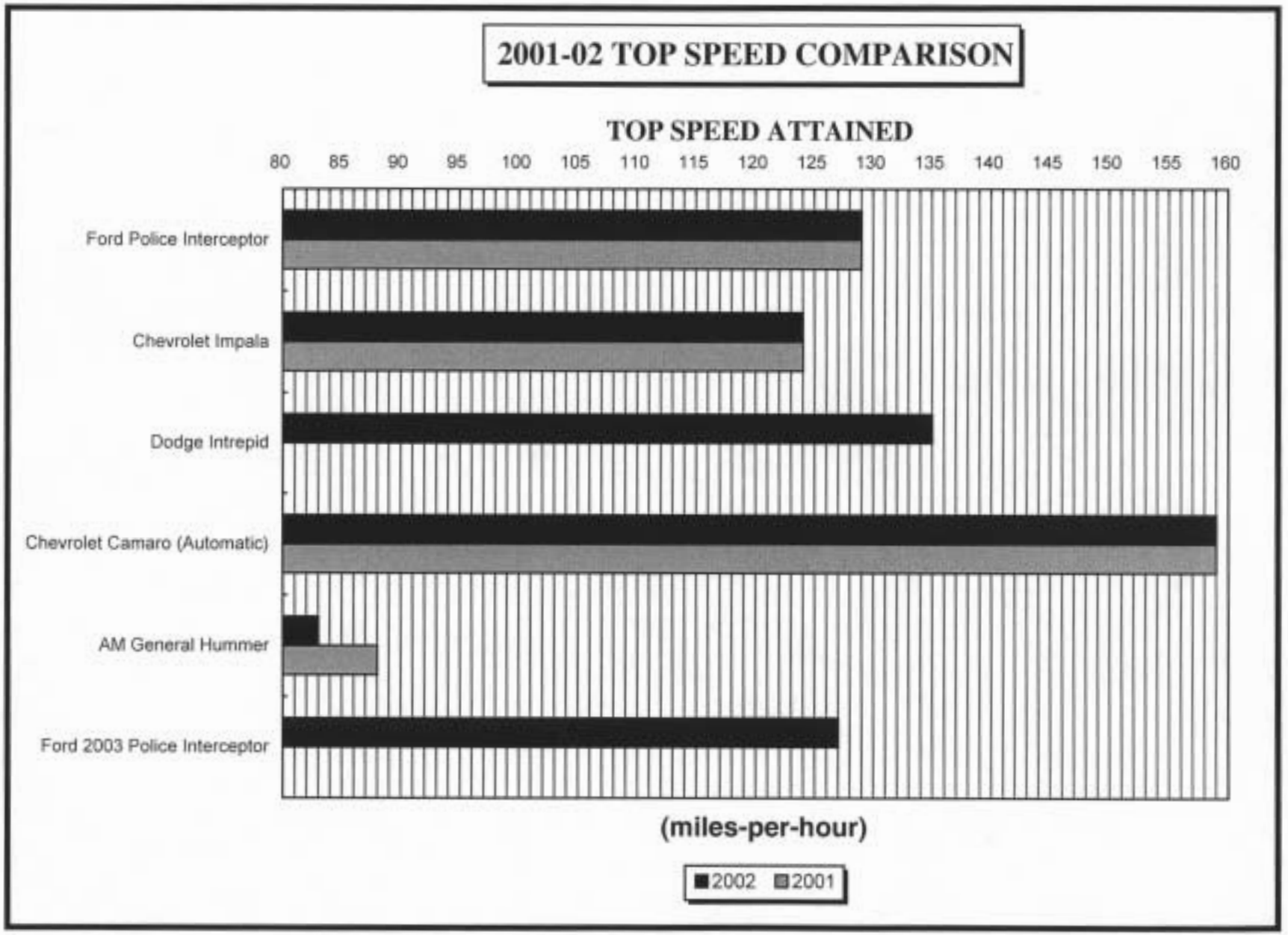

2001-02 ACCELERATION COMPARISON
0 - 60 MPH
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
Ford Police Interceptor
Chevrolet Impala
Dodge Intrepid
Chevrolet Camaro (Automatic)
AM General Hummer
Ford 2003 Police Interceptor
(seconds)
2002
2001

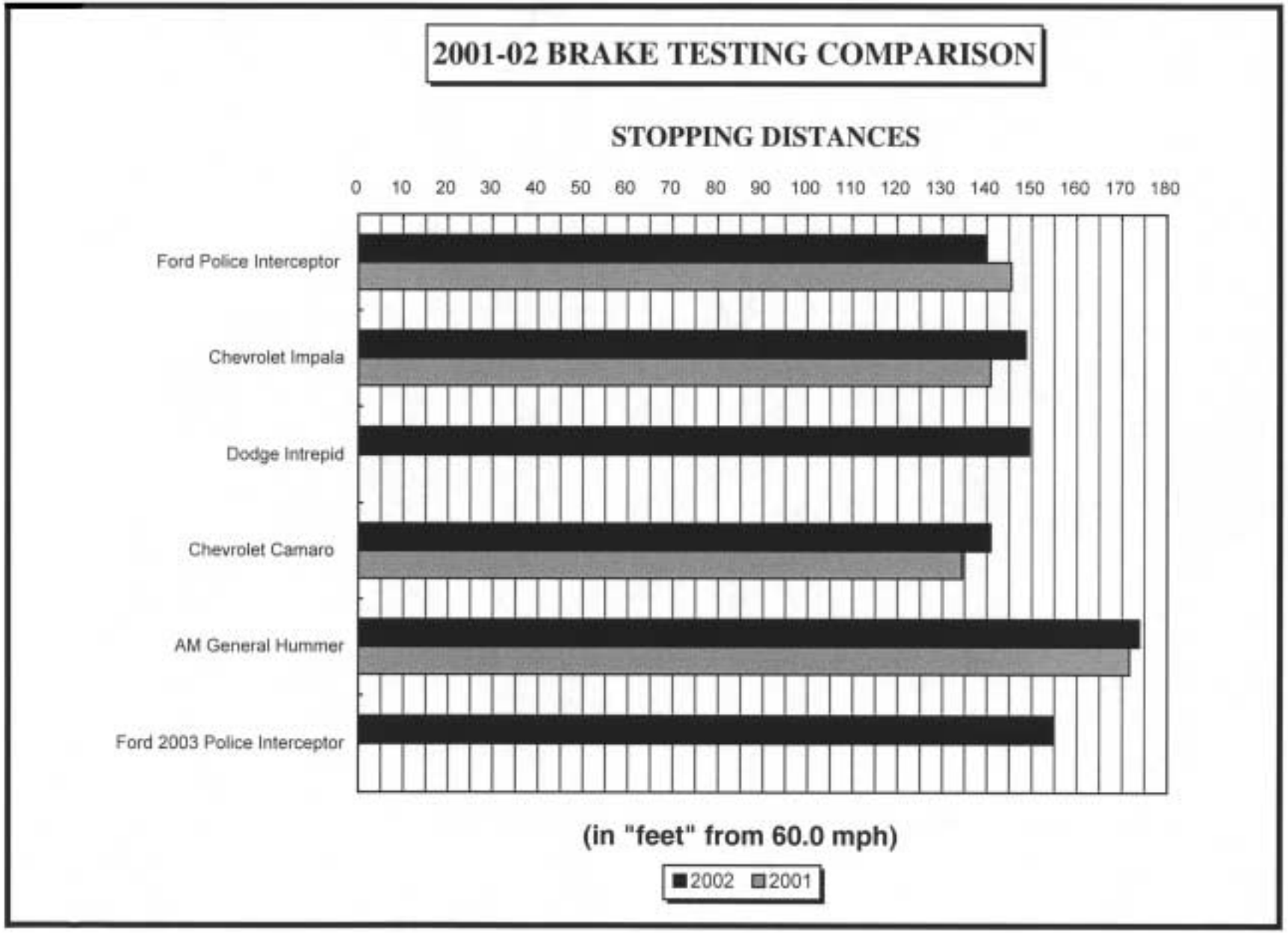


Note: The Hummer 2002 time was 56.25 seconds.
The Hummer 2001 time was 49.27 seconds.



Note: The Hummer did not reach 100 mph.


2001-02 TOP SPEED COMPARISON
TOP SPEED ATTAINED
80
85
90
95
100
105
110
115
120
125
130
135
140
145
150
155
160
Ford Police Interceptor
Chevrolet Impala
Dodge Intrepid
Chevrolet Camaro (Automatic)
AM General Hummer
Ford 2003 Police Interceptor
(miles-per-hour)
2002
2001


2001-02 BRAKE TESTING COMPARISON
STOPPING DISTANCES
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180
Ford Police Interceptor
Chevrolet Impala
Dodge Intrepid
Chevrolet Camaro
AM General Hummer
Ford 2003 Police Interceptor
(in "feet" from 60.0 mph)
2002 2001

F/Lt. Howard Powers greets guests from Australia.
(Second from left)

Vehicles on display at DaimlerChrysler Proving Grounds.

Check-in at Grattan Raceway.

Staging for vehicle dynamics at Grattan Raceway.

APPENDIX II
SPECIAL SERVICE VEHICLES

The issue of what makes a police vehicle a “police package” is an issue that will be with us for some time. Many law enforcement agencies still require a police vehicle to be capable of participating in a pursuit and look to the manufacturers to put their engineering talents towards that goal. At the same time some law enforcement agencies need a vehicle that has cargo capacity and other attributes, but does not require pursuit capabilities, for this, the manufacturers offer “special service” vehicles.

The Michigan Department of State Police presents this information on “special service” vehicles with the caveat that the reader is aware that these vehicles are not engineered for high speed or pursuit driving. The vehicles were tested in all the categories except vehicle dynamics, which is high-speed handling and represents pursuit applications.

The special service vehicles were tested in the following: Acceleration, Top Speed, Braking, Fuel Economy, and Ergonomics & Communications.

SPECIAL SERVICE VEHICLES ARE NOT ENGINEERED FOR HIGH SPEED AND PURSUIT APPLICATIONS.

CHEVROLET TAHOE
5.3L SPFI (2-WHEEL DRIVE)

TEST VEHICLE DESCRIPTION

MAKE Chevrolet	**MODEL** Tahoe 2WD		**SALES CODE NO.** C15706	
ENGINE DISPLACEMENT	**CUBIC INCHES** 327		**LITERS**	5.3**
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST**	Single
HORSEPOWER (SAENET)	285 @ 5200 RPM		**ALTERNATOR**	130 amp.
TORQUE	325 ft. lbs. @ 4000 RPM		**BATTERY**	600 cca.
COMPRESSION RATIO	9.5:1			
TRANSMISSION	**MODEL** 4L60E	**TYPE** 4-Speed Automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	3.42			
STEERING	Power - recirculating ball			
TURNING CIRCLE (CURB TO CURB)	38.3 Feet			
TIRE SIZE, LOAD & SPEED RATING	P245/75 R16 109S Goodyear Wrangler ST			
SUSPENSION TYPE (FRONT)	Independent, single lower arm with torsion bar			
SUSPENSION TYPE (REAR)	Multi-link with coil springs			
GROUND CLEARANCE, MINIMUM	9.7 in.	**LOCATION** Front cross member		
BRAKE SYSTEM	Vacuum Power Anti-lock			
BRAKES, FRONT	**TYPE**	Disc	**SWEPT AREA**	213 sq. in.
BRAKES, REAR	**TYPE**	Disc	**SWEPT AREA**	133 sq. in.
FUEL CAPACITY	**GALLONS**	26.0	**LITERS**	98.4
GENERAL MEASUREMENTS	**WHEELBASE**	116.0 in.	**LENGTH**	198.9 in.
	TEST WEIGHT	5080 lbs.	**HEIGHT**	76.3 in.
HEADROOM	**FRONT**	40.7 in.	**REAR**	39.4 in.
LEGROOM	**FRONT**	41.3 in.	**REAR**	38.6 in.
SHOULDER ROOM	**FRONT**	65.2 in.	**REAR**	65.1 in.
HIPROOM	**FRONT**	61.4 in.	**REAR**	61.3 in.
INTERIOR VOLUME ***MAX. CARGO IS W/REAR SEATS FOLDED DOWN**	**FRONT**	94.3 cu. ft.	**REAR**	57.3 cu. ft.
	COMB	151.6 cu. ft.	***MAX. CARGO**	108.2 cu. ft.
EPA MILEAGE EST. (MPG)	**CITY** 15	**HIGHWAY** 20	**COMBINED** 16.5	

**Vehicle tested with “optional” engine – standard engine is 4.8L, same as 2001 model for performance rating.

CHEVROLET TAHOE
5.3L SPFI (4-WHEEL DRIVE)

TEST VEHICLE DESCRIPTION

MAKE Chevrolet	**MODEL** Tahoe 4WD		**SALES CODE NO.** K15706		
ENGINE DISPLACEMENT	**CUBIC INCHES** 327		**LITERS** 5.3**		
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST** Single		
HORSEPOWER (SAENET)	285 @ 5200 RPM		**ALTERNATOR** 130 amp.		
TORQUE	325 ft. lbs. @ 4000 RPM		**BATTERY** 600 cca.		
COMPRESSION RATIO	9.5:1				
TRANSMISSION	**MODEL** 4L60E	**TYPE** 4-Speed electronic automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.73				
STEERING	Speed sensitive, power, recirculating ball				
TURNING CIRCLE (CURB TO CURB)	38.3 Feet				
TIRE SIZE, LOAD & SPEED RATING	P245/75 R16 109S Goodyear Wrangler ST				
SUSPENSION TYPE (FRONT)	Independent, single lower arm with torsion bar				
SUSPENSION TYPE (REAR)	Multi-link with coil springs				
GROUND CLEARANCE, MINIMUM	10.7 in.	**LOCATION** Front differential			
BRAKE SYSTEM	Vacuum Power Anti-lock				
BRAKES, FRONT	**TYPE** Disc		**SWEPT AREA** 213 sq. in.		
BRAKES, REAR	**TYPE** Disc		**SWEPT AREA** 133 sq. in.		
FUEL CAPACITY	**GALLONS** 26.0		**LITERS** 98.4		
GENERAL MEASUREMENTS	**WHEELBASE** 116.0 in.		**LENGTH** 198.9 in.		
	TEST WEIGHT 5303 lbs.		**HEIGHT** 76.3 in.		
HEADROOM	**FRONT** 40.7 in.		**REAR** 39.4 in.		
LEGROOM	**FRONT** 41.3 in.		**REAR** 38.6 in.		
SHOULDER ROOM	**FRONT** 65.2 in.		**REAR** 65.1 in.		
HIPROOM	**FRONT** 61.4 in.		**REAR** 61.3 in.		
INTERIOR VOLUME	**FRONT** 94.3 cu. ft.		**REAR** 57.3 cu. ft.		
***MAX. CARGO IS W/REAR SEATS FOLDED DOWN**	**COMB** 151.6 cu. ft.		***MAX. CARGO** 108.2 cu. ft.		
EPA MILEAGE EST. (MPG)	**CITY** 14	**HIGHWAY** 18		**COMBINED** 15	

**Vehicle tested with “optional” engine – standard engine is 4.8L, same as 2001 model for performance rating.

FORD EXPLORER
4.6L SPFI (4-WHEEL DRIVE)

(NOT DESIGNED FOR HIGH SPEED OR PURSUIT DRIVING)

TEST VEHICLE DESCRIPTION

MAKE Ford	**MODEL** Explorer 4WD		**SALES CODE NO.** U72		
ENGINE DISPLACEMENT	**CUBIC INCHES** 281		**LITERS** 4.6 V8		
FUEL SYSTEM	Sequential Fuel Injection		**EXHAUST** Single		
HORSEPOWER (SAENET)	239 @ 4750 RPM		**ALTERNATOR** 130 amp.		
TORQUE	282 ft. lbs. @ 4000 RPM		**BATTERY** 650 cca.		
COMPRESSION RATIO	9.2:1				
TRANSMISSION	**MODEL** 5R55W5	**TYPE** 5-Speed Automatic Overdrive			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.55				
STEERING	Power - Rack & Pinion				
TURNING CIRCLE (CURB TO CURB)	36.75 Feet				
TIRE SIZE, LOAD & SPEED RATING	P245/70 R16 106S Goodyear Wrangler AP M/S				
SUSPENSION TYPE (FRONT)	Coil spring (SLA)				
SUSPENSION TYPE (REAR)	Independent (IRS)				
GROUND CLEARANCE, MINIMUM	9.2 in.	**LOCATION** Transmission Cross Member			
BRAKE SYSTEM	Power w/4-wheel disc, ABS				
BRAKES, FRONT	**TYPE** Disc		**SWEPT AREA** 220.56 sq. in.		
BRAKES, REAR	**TYPE** Disc		**SWEPT AREA** 178.67 sq. in.		
FUEL CAPACITY	**GALLONS** 22.5		**LITERS** 85.0		
GENERAL MEASUREMENTS	**WHEELBASE** 114.0 in.		**LENGTH** 189.5 in.		
	TEST WEIGHT 4496 lbs.		**HEIGHT** 69.2 in.		
HEADROOM	**FRONT** 39.9 in.		**REAR** 38.9 in.		
LEGROOM	**FRONT** 42.4 in.		**REAR** 37.2 in.		
SHOULDER ROOM	**FRONT** 59.1 in.		**REAR** 58.9 in.		
HIPROOM	**FRONT** 55.0 in.		**REAR** 54.2 in.		
INTERIOR VOLUME ***MAX. CARGO IS W/REAR SEATS FOLDED DOWN**	**FRONT** 81.8 cu. ft.		**REAR** 44.5 cu. ft.		
	COMB 126.3 cu. ft.		***MAX. CARGO** 88.0 cu. ft.		
EPA MILEAGE EST. (MPG)	**CITY** 14	**HIGHWAY** 19		**COMBINED** 16	

FORD EXPEDITION
5.4L SMFI (4-WHEEL DRIVE)

(NOT DESIGNED FOR HIGH SPEED OR PURSUIT DRIVING)

TEST VEHICLE DESCRIPTION

MAKE Ford	**MODEL** Expedition 4WD		**SALES CODE NO.** U16	
ENGINE DISPLACEMENT	**CUBIC INCHES** 330		**LITERS**	5.4
FUEL SYSTEM	Sequential Multiport Fuel Injection		**EXHAUST**	Single
HORSEPOWER (SAENET)	260 @ 4500 RPM		**ALTERNATOR**	130 amp.
TORQUE	350 ft. lbs. @ 2500 RPM		**BATTERY**	650 cca.
COMPRESSION RATIO	9.0:1			
TRANSMISSION	**MODEL** 4R70W	**TYPE** 4-Speed Auto O/D		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	3.55			
STEERING	Power			
TURNING CIRCLE (CURB TO CURB)	40.5 Feet			
TIRE SIZE, LOAD & SPEED RATING	P255/70 R16 109S Goodyear Wrangler RT/S			
SUSPENSION TYPE (FRONT)	Coil Spring			
SUSPENSION TYPE (REAR)	Coil Spring			
GROUND CLEARANCE, MINIMUM	7.5 in.	**LOCATION** Rear axle		
BRAKE SYSTEM	Power Disc w/4-wheel anti-lock			
BRAKES, FRONT	**TYPE**	Disc	**SWEPT AREA**	222.0 sq. in.
BRAKES, REAR	**TYPE**	Disc	**SWEPT AREA**	201.0 sq. in.
FUEL CAPACITY	**GALLONS**	30.0	**LITERS**	113.0
GENERAL MEASUREMENTS	**WHEELBASE**	119.1 in.	**LENGTH**	204.6 in.
	TEST WEIGHT	5353 lbs.	**HEIGHT**	74.3 in.
HEADROOM	**FRONT**	39.7 in.	**REAR**	39.8 in.
LEGROOM	**FRONT**	41.2 in.	**REAR**	38.6 in.
SHOULDER ROOM	**FRONT**	63.9 in.	**REAR**	64.4 in.
HIPROOM	**FRONT**	63.0 in.	**REAR**	62.4 in.
INTERIOR VOLUME	**FRONT**	93.2 cu. ft.	**REAR**	55.8 cu. ft.
***MAX. CARGO IS W/REAR SEATS FOLDED DOWN**	**COMB**	149.0 cu. ft.	***MAX. CARGO**	106.1 cu. ft.
EPA MILEAGE EST. (MPG)	**CITY** 12	**HIGHWAY** 16	**COMBINED** 14	

FORD EXCURSION
6.8L MPFI (4-WHEEL DRIVE)

TEST VEHICLE DESCRIPTION

MAKE Ford	**MODEL** Excursion 4WD		**SALES CODE NO.** U40	
ENGINE DISPLACEMENT	**CUBIC INCHES** 415		**LITERS**	6.8 V10
FUEL SYSTEM	Multiport Fuel Injection		**EXHAUST**	Single
HORSEPOWER (SAENET)	310 @ 4250 RPM		**ALTERNATOR**	130 amp.
TORQUE	425 ft. lbs. @ 3250 RPM		**BATTERY**	750 cca.
COMPRESSION RATIO	9.0:1			
TRANSMISSION	**MODEL** 4R100	**TYPE** 4-Speed Automatic Overdrive		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	3.73			
STEERING	Power Steering			
TURNING CIRCLE (CURB TO CURB)	47.1 Feet			
TIRE SIZE, LOAD & SPEED RATING	LT 265/75 R16 Firestone Steeltex R4S M/S			
SUSPENSION TYPE (FRONT)	Twin I-beam			
SUSPENSION TYPE (REAR)	Leaf spring solid axle			
GROUND CLEARANCE, MINIMUM	8.11 in.	**LOCATION** Differential		
BRAKE SYSTEM	Power w/4-wheel disc, ABS			
BRAKES, FRONT	**TYPE**	Disc	**SWEPT AREA**	264.48 sq. in.
BRAKES, REAR	**TYPE**	Disc	**SWEPT AREA**	244.81 sq. in.
FUEL CAPACITY	**GALLONS**	44.0	**LITERS**	167.0
GENERAL MEASUREMENTS	**WHEELBASE**	137.1 in.	**LENGTH**	226.7 in.
	TEST WEIGHT	6646 lbs.	**HEIGHT**	77.2 in.
HEADROOM	**FRONT**	41.0 in.	**REAR**	41.1 in.
LEGROOM	**FRONT**	42.3 in.	**REAR**	40.5 in.
SHOULDER ROOM	**FRONT**	68.3 in.	**REAR**	67.0 in.
HIPROOM	**FRONT**	67.5 in.	**REAR**	66.9 in.
INTERIOR VOLUME ***MAX. CARGO IS W/REAR SEATS FOLDED DOWN**	**FRONT**	101.2 cu. ft.	**REAR**	63.8 cu. ft.
	COMB	165.0 cu. ft.	***MAX. CARGO**	108.3 cu. ft.
EPA MILEAGE EST. (MPG)	**CITY** N/A	**HIGHWAY** N/A	**COMBINED** N/A	

N/A: Not required.

FORD LONG WHEELBASE CROWN VICTORIA
4.6L SPFI

(NOT DESIGNED FOR HIGH SPEED OR PURSUIT DRIVING)

TEST VEHICLE DESCRIPTION

MAKE Ford Long Wheelbase	**MODEL** Crown Victoria		**SALES CODE NO.** P70	
ENGINE DISPLACEMENT	**CUBIC INCHES** 281		**LITERS**	4.6
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST**	Single
HORSEPOWER (SAENET)	220 @ 4750 RPM		**ALTERNATOR**	135 amp.
TORQUE	265 ft. lbs. @ 4000 RPM		**BATTERY**	750 cca.
COMPRESSION RATIO	9.4:1			
TRANSMISSION	**MODEL** 4R70W	**TYPE** 4-Speed electronic automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	2.73:1			
STEERING	Recirculating ball & nut w/int,. pwr (constant power)			
TURNING CIRCLE (CURB TO CURB)	42.1 Feet			
TIRE SIZE, LOAD & SPEED RATING	P225/60 R16 97V Goodyear Eagle RS-A M/S			
SUSPENSION TYPE (FRONT)	Independent SLA w/ball joint & coil springs			
SUSPENSION TYPE (REAR)	4 bar link with Watts linkage			
GROUND CLEARANCE, MINIMUM	6.0 in.	**LOCATION** Transmission		
BRAKE SYSTEM	Power, dual front piston single rear piston, 4 circuit & ABS			
BRAKES, FRONT	**TYPE**	Vented Disc	**SWEPT AREA**	314.1 sq. in.
BRAKES, REAR	**TYPE**	Solid Disc	**SWEPT AREA**	174.8 sq. in.
FUEL CAPACITY	**GALLONS**	19.0	**LITERS**	71.9
GENERAL MEASUREMENTS	**WHEELBASE**	120.7	**LENGTH**	218.0
	TEST WEIGHT	4048 lbs.	**HEIGHT**	58.5 in.
HEADROOM	**FRONT**	39.4 in.	**REAR**	38.0 in.
LEGROOM	**FRONT**	42.5 in.	**REAR**	45.6 in.
SHOULDER ROOM	**FRONT**	60.8 in.	**REAR**	60.3 in.
HIPROOM	**FRONT**	57.1 in.	**REAR**	59.0 in.
INTERIOR VOLUME	**FRONT**	58.2 cu. ft.	**REAR**	60.1 cu. ft.
	COMB	118.3 cu. ft.	**TRUNK**	20.6 cu. ft.
EPA MILEAGE EST. (MPG)	**CITY** 17	**HIGHWAY** 25	**COMBINED** 20	

DODGE DURANGO
4.7L SMPI (2-WHEEL DRIVE)

(NOT DESIGNED FOR HIGH SPEED OR PURSUIT DRIVING)

TEST VEHICLE DESCRIPTION

MAKE Dodge	**MODEL** Durango 2WD		**SALES CODE NO.** DN1M74		
ENGINE DISPLACEMENT	**CUBIC INCHES** 287		**LITERS** 4.7		
FUEL SYSTEM	Sequential Multiport Injection		**EXHAUST** Single		
HORSEPOWER (SAENET)	235 @ 4800 RPM		**ALTERNATOR** 136 amp.		
TORQUE	295 ft. lbs. @ 3200 RPM		**BATTERY** 750 cca.		
COMPRESSION RATIO	9.1:1				
TRANSMISSION	**MODEL** 45RFE	**TYPE** Automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.92 w/Anti-spin				
STEERING	Rack & Pinion w/variable assist				
TURNING CIRCLE (CURB TO CURB)	38.26 Feet				
TIRE SIZE, LOAD & SPEED RATING	P235/70 R16 104S Michelin LTX A/S M/S				
SUSPENSION TYPE (FRONT)	Independent front suspension, coil				
SUSPENSION TYPE (REAR)	Leaf				
GROUND CLEARANCE, MINIMUM	8.5 in.	**LOCATION** Rear Axle			
BRAKE SYSTEM	4-wheel disc ABS				
BRAKES, FRONT	**TYPE** Disc		**SWEPT AREA** 209.6 sq. in.		
BRAKES, REAR	**TYPE** Disc		**SWEPT AREA** 204.0 sq. in.		
FUEL CAPACITY	**GALLONS** 25.0		**LITERS** 94.7		
GENERAL MEASUREMENTS	**WHEELBASE** 116 in.		**LENGTH** 193.5 in.		
	TEST WEIGHT 4567 lbs.		**HEIGHT** 70.5 in.		
HEADROOM	**FRONT** 39.8 in.		**REAR** 40.3 in.		
LEGROOM	**FRONT** 41.9 in.		**REAR** 35.4 in.		
SHOULDER ROOM	**FRONT** 57.6 in.		**REAR** 57.9 in.		
HIPROOM	**FRONT** 56.9 in.		**REAR** 55.5 in.		
INTERIOR VOLUME ***MAX. CARGO IS W/REAR SEATS FOLDED DOWN**	**FRONT** 55.2 cu. ft.		**REAR** 18.8 cu. ft.		
	COMB 155.8 cu. ft.		***MAX. CARGO** 88.0 cu. ft.		
EPA MILEAGE EST. (MPG)	**CITY** 14	**HIGHWAY** 19		**COMBINED** 16	

DODGE DURANGO
4.7L SMPI (4-WHEEL DRIVE)

(NOT DESIGNED FOR HIGH SPEED OR PURSUIT DRIVING)

TEST VEHICLE DESCRIPTION

MAKE Dodge	**MODEL** Durango 4WD		**SALES CODE NO.** DN5H74		
ENGINE DISPLACEMENT	**CUBIC INCHES** 287		**LITERS** 4.7		
FUEL SYSTEM	Sequential Multiport Injection		**EXHAUST** Single		
HORSEPOWER (SAENET)	235 @ 4800 RPM		**ALTERNATOR** 136 amp.		
TORQUE	295 ft. lbs. @ 3200 RPM		**BATTERY** 750 cca.		
COMPRESSION RATIO	9.1:1				
TRANSMISSION	**MODEL** 45RFE	**TYPE** Automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.92 w/Anti-spin				
STEERING	Rack & Pinion w/variable assist				
TURNING CIRCLE (CURB TO CURB)	38.26 Feet				
TIRE SIZE, LOAD & SPEED RATING	P245/70 R16 106S Goodyear Wrangler M/S				
SUSPENSION TYPE (FRONT)	Independent front suspension, Torsion bar				
SUSPENSION TYPE (REAR)	Leaf				
GROUND CLEARANCE, MINIMUM	8.5 in.	**LOCATION** Rear Axle			
BRAKE SYSTEM	4-wheel anti-lock disc				
BRAKES, FRONT	**TYPE** Disc		**SWEPT AREA** 209.6 sq. in.		
BRAKES, REAR	**TYPE** Disc		**SWEPT AREA** 204.0 sq. in.		
FUEL CAPACITY	**GALLONS** 25.0		**LITERS** 94.7		
GENERAL MEASUREMENTS	**WHEELBASE** 116 in.		**LENGTH** 193.5 in.		
	TEST WEIGHT 4770 lbs.		**HEIGHT** 72.0 in.		
HEADROOM	**FRONT** 39.8 in.		**REAR** 40.3 in.		
LEGROOM	**FRONT** 41.9 in.		**REAR** 35.4 in.		
SHOULDER ROOM	**FRONT** 57.6 in.		**REAR** 57.9 in.		
HIPROOM	**FRONT** 56.9 in.		**REAR** 55.5 in.		
INTERIOR VOLUME ***MAX. CARGO IS W/REAR SEATS FOLDED DOWN**	**FRONT** 55.2 cu. ft.		**REAR** 18.8 cu. ft.		
	COMB 155.8 cu. ft.		***MAX. CARGO** 88.0 cu. ft.		
EPA MILEAGE EST. (MPG)	**CITY** 13	**HIGHWAY** 17		**COMBINED** 15	

TEST VEHICLE DESCRIPTION SUMMARY

	Chevrolet 2WD Tahoe	Chevrolet 4WD Tahoe	Ford 4WD Explorer	Ford 4WD Expedition
ENGINE DISPLACEMENT – CU. IN.	327	327	281	330
ENGINE DISPLACEMENT – LITERS	5.3*	5.3*	4.6	5.4
ENGINE FUEL SYSTEM	SPFI	SPFI	SFI	SMFI
HORSEPOWER (SAE NET)	285	285	239	260
TORQUE (FT. LBS.)	325	325	282	350
COMPRESSION RATIO	9.5:1	9.5:1	9.2:1	9.0:1
AXLE RATIO	3.42	3.73	3.55	3.55
TURNING CIRCLE – FT. CURB TO CURB	38.3	38.3	36.75	40.5
TRANSMISSION	4 Speed auto	4 Speed auto	4 Speed auto	4 Speed auto
TRANSMISSION MODEL NUMBER	4L60E	4L60E	5R55W5	4R70W
LOCKUP TORQUE CONVERTER	Yes	Yes	Yes	Yes
TRANSMISSION OVERDRIVE	Yes	Yes	Yes	Yes
TIRE SIZE	P245/75R	P245/75R	P245/70R	P255/70R
WHEEL RIM SIZE – INCHES	16	16	16	16
GROUND CLEARANCE – INCHES	9.7	10.7	9.2	7.5
BRAKE SYSTEM	Power, ABS	Power, ABS	Power, ABS	Power, ABS
BRAKES – FRONT TYPE	Disc	Disc	Disc	Disc
BRAKES – REAR TYPE	Disc	Disc	Disc	Disc
FUEL CAPACITY – GALLONS	26.0	26.0	22.5	30.0
FUEL CAPACITY – LITERS	98.4	98.4	85.0	113.0
OVERALL LENGTH – INCHES	198.9	198.9	189.5	204.6
OVERALL HEIGHT – INCHES	76.3	76.3	69.2	74.3
TEST WEIGHT – LBS.	5080	5303	4496	5353
WHEELBASE – INCHES	116.0	116.0	114.0	119.1
HEADROOM FRONT – INCHES	40.7	40.7	39.9	39.7
HEADROOM REAR – INCHES	39.4	39.4	38.9	39.8
LEGROOM FRONT – INCHES	41.3	41.3	42.4	41.2
LEGROOM REAR – INCHES	38.6	38.6	37.2	38.6
SHOULDER ROOM FRONT – INCHES	65.2	65.2	59.1	63.9
SHOULDER ROOM REAR – INCHES	65.1	65.1	58.9	64.4
HIPROOM FRONT – INCHES	61.4	61.4	55.0	63.0
HIPROOM REAR – INCHES	61.3	61.3	54.2	62.4
INTERIOR VOLUME FRONT – CU. FT.	94.3	94.3	81.8	93.2
INTERIOR VOLUME REAR – CU. FT.	57.3	57.3	44.5	55.8
INTERIOR VOLUME COMB. – CU. FT.	151.6	151.6	126.3	149.0
REAR MAXIMUM CARGO – CU. FT.	108.2	108.2	88.0	106.1
EPA MILEAGE – CITY – MPG	15	14	14	12
EPA MILEAGE – HIGHWAY – MPG	20	18	19	16
EPA MILEAGE – COMBINED – MPG	16.5	15	16	14

*Vehicle tested with “optional” engine – standard engine is 4.8L, same as 2001 model for performance rating.

TEST VEHICLE DESCRIPTION SUMMARY

	Ford 4WD Excursion	Ford LWB Crown Victoria	Dodge 2WD Durango	Dodge 4WD Durango
ENGINE DISPLACEMENT – CU. IN.	415	281	287	287
ENGINE DISPLACEMENT – LITERS	6.8	4.6	4.7	4.7
ENGINE FUEL SYSTEM	MFI	SPFI	SMPI	SMPI
HORSEPOWER (SAE NET)	310	220	235	235
TORQUE (FT. LBS.)	425	265	295	295
COMPRESSION RATIO	9.0:1	9.4:1	9.1:1	9.1:1
AXLE RATIO	3.73	2.73:1	3.92	3.92
TURNING CIRCLE – FT. CURB TO CURB	47.1	42.1	38.26	38.26
TRANSMISSION	4 Speed auto	4 Speed auto	Automatic	Automatic
TRANSMISSION MODEL NUMBER	4R100	4R70W	45RFE	45RFE
LOCKUP TORQUE CONVERTER	Yes	Yes	Yes	Yes
TRANSMISSION OVERDRIVE	Yes	Yes	Yes	Yes
TIRE SIZE	LT 265/75R	P225/60R	P235/70R	P245/70R
WHEEL RIM SIZE – INCHES	16	16	16	16
GROUND CLEARANCE – INCHES	8.11	6.0	8.5	8.5
BRAKE SYSTEM	Power, ABS	Power, ABS	Disc, ABS	Disc, ABS
BRAKES – FRONT TYPE	Disc	Vented Disc	Disc	Disc
BRAKES – REAR TYPE	Disc	Solid Disc	Disc	Disc
FUEL CAPACITY – GALLONS	44.0	19.0	25.0	25.0
FUEL CAPACITY – LITERS	167.0	71.9	94.7	94.7
OVERALL LENGTH – INCHES	226.7	218.0	193.5	193.5
OVERALL HEIGHT – INCHES	77.2	58.5	70.5	72.0
TEST WEIGHT – LBS.	6646	4048	4567	4770
WHEELBASE – INCHES	137.1	120.7	116.0	116.0
HEADROOM FRONT – INCHES	41.0	39.4	39.8	39.8
HEADROOM REAR – INCHES	41.1	38.0	40.3	40.3
LEGROOM FRONT – INCHES	42.3	42.5	41.9	41.9
LEGROOM REAR – INCHES	40.5	45.6	35.4	35.4
SHOULDER ROOM FRONT – INCHES	68.3	60.8	57.6	57.6
SHOULDER ROOM REAR – INCHES	67.0	60.3	57.9	57.9
HIPROOM FRONT – INCHES	67.5	57.1	56.9	56.9
HIPROOM REAR – INCHES	66.9	59.0	55.5	55.5
INTERIOR VOLUME FRONT – CU. FT.	101.2	58.2	55.2	55.2
INTERIOR VOLUME REAR – CU. FT.	63.8	60.1	18.8	18.8
INTERIOR VOLUME COMB. – CU. FT.	165.0	118.3	155.8	155.8
REAR MAXIMUM CARGO – CU. FT.	108.3	20.6	88.0	88.0
EPA MILEAGE – CITY – MPG	N/A	17	14	13
EPA MILEAGE – HIGHWAY – MPG	N/A	25	19	17
EPA MILEAGE – COMBINED – MPG	N/A	20	16	15

N/A: Not required.

SUMMARY OF ACCELERATION, TOP SPEED, AND BRAKE TESTING

ACCELERATION*		**Chevrolet Tahoe 2WD 5.3L SPFI**	**Chevrolet Tahoe 4WD 5.3L SPFI**	**Ford 4WD Explorer 4.6L SFI**	**Ford 4WD Expedition 5.4L SMFI**
0 – 20 mph	(sec.)	1.95	1.97	2.35	2.03
0 – 30 mph	(sec.)	3.18	3.16	3.82	3.66
0 – 40 mph	(sec.)	4.50	4.55	5.61	5.37
0 – 50 mph	(sec.)	6.36	6.53	7.93	7.57
0 – 60 mph	(sec.)	8.62	8.73	11.07	10.58
0 – 70 mph	(sec.)	11.07	11.53	14.47	13.88
0 – 80 mph	(sec.)	14.88	15.82	18.82	18.21
0 – 90 mph	(sec.)	19.86	20.54	25.28	25.94
0 – 100 mph	(sec.)	N/A	N/A	34.31	36.27
TOP SPEED	(mph)	98**	98**	105**	105**
DISTANCE TO REACH					
110 mph	(miles)	N/A	N/A	N/A	N/A
120 mph	(miles)	N/A	N/A	N/A	N/A
QUARTER MILE					
Time	(sec.)	16.66	16.84	18.16	17.84
Speed	(miles)	83.68	82.45	78.60	79.43
		ABS	**ABS**	**ABS**	**ABS**
BRAKING – PHASE I					
Average Deceleration Rate	(ft/s^2)	24.94	25.44	27.34	23.44
BRAKING – PHASE II					
Average Deceleration Rate	(ft/s^2)	24.24	23.55	27.61	23.70
BRAKING – FINAL SCORE					
Deceleration Rate	**(ft/s^2)**	**24.59**	**24.49**	**27.47**	**23.57**
Projected Stopping Distance from 60 mph	(feet)	157.5	158.1	140.9	164.3

*Four run average.
**Vehicle equipped with an electronic speed limiter.

SUMMARY OF ACCELERATION, TOP SPEED, AND BRAKE TESTING

ACCELERATION*		Ford 4WD Excursion 6.8L MPFI	Ford LWB Crown Vic 4.6L SPFI	Dodge 2WD Durango 4.7L SMPI	Dodge 4WD Durango 4.7L SMPI
0 – 20 mph	(sec.)	2.09	2.04	1.83	1.90
0 – 30 mph	(sec.)	3.60	3.64	3.07	3.23
0 – 40 mph	(sec.)	5.24	5.26	4.73	5.01
0 – 50 mph	(sec.)	7.59	7.20	6.77	7.32
0 – 60 mph	(sec.)	10.31	9.90	9.23	10.08
0 – 70 mph	(sec.)	13.51	13.00	12.77	14.03
0 – 80 mph	(sec.)	17.94	16.49	17.08	19.08
0 – 90 mph	(sec.)	23.70	21.29	22.46	25.12
0 – 100 mph	(sec.)	N/A	29.60	30.19	34.93
TOP SPEED	(mph)	93**	104**	114**	112**
DISTANCE TO REACH					
110 mph	(miles)	N/A	N/A	1.01	2.58
120 mph	(miles)	N/A	N/A	N/A	N/A
QUARTER MILE					
Time	(sec.)	17.73	17.48	17.17	17.66
Speed	(miles)	79.58	82.58	80.20	77.38
		ABS	**ABS**	**ABS**	**ABS**
BRAKING – PHASE I					
Average Deceleration Rate	(ft/s^2)	22.98	27.44	25.43	24.38
BRAKING – PHASE II					
Average Deceleration Rate	(ft/s^2)	24.02	27.21	24.67	23.86
BRAKING – FINAL SCORE					
Deceleration Rate	**(ft/s^2)**	**23.50**	**27.33**	**25.05**	**24.12**
Projected Stopping Distance from 60 mph	(feet)	164.8	141.7	154.6	160.6

*Four run average.
**Vehicle equipped with an electronic speed limiter.

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 13:47 p.m. **TEMPERATURE:** 63.0°F

MAKE and MODEL: Chevrolet Tahoe 5.3L (2WD) **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	60.9 mph	158.9 feet	25.11 ft/s^2
Stop #2	60.7 mph	154.1 feet	25.72 ft/s^2
Stop #3	----- mph	------- feet	------- ft/s^2
Stop #4	60.7 mph	162.1 feet	24.45 ft/s^2
Stop #5	60.0 mph	154.7 feet	25.03 ft/s^2
Stop #6	59.5 mph	156.2 feet	24.38 ft/s^2

AVERAGE DECELERATION RATE (Phase I): 24.94 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	----- mph	------- feet	------- ft/s^2
Stop #2	59.7 mph	152.7 feet	25.11 ft/s^2
Stop #3	59.5 mph	148.7 feet	25.61 ft/s^2
Stop #4	60.0 mph	162.5 feet	23.83 ft/s^2
Stop #5	60.2 mph	168.1 feet	23.19 ft/s^2
Stop #6	59.9 mph	164.6 feet	23.45 ft/s^2

AVERAGE DECELERATION RATE (Phase II): 24.24 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 24.59 ft/s^2

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 14:45 p.m. **TEMPERATURE:** 63.6°F

MAKE and MODEL: Chevrolet Tahoe 5.3L (4WD) **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	59.8 mph	150.4 feet	25.57 ft/s^2
Stop #2	----- mph	------- feet	------- ft/s^2
Stop #3	59.9 mph	150.3 feet	25.68 ft/s^2
Stop #4	60.4 mph	152.6 feet	25.71 ft/s^2
Stop #5	60.1 mph	155.8 feet	24.94 ft/s^2
Stop #6	60.9 mph	157.8 feet	25.28 ft/s^2

AVERAGE DECELERATION RATE (Phase I): 25.44 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	60.4 mph	157.4 feet	24.93 ft/s^2
Stop #2	60.6 mph	165.5 feet	23.87 ft/s^2
Stop #3	60.2 mph	164.5 feet	23.70 ft/s^2
Stop #4	60.8 mph	175.9 feet	22.60 ft/s^2
Stop #5	----- mph	------- feet	------- ft/s^2
Stop #6	60.8 mph	175.7 feet	22.63 ft/s^2

AVERAGE DECELERATION RATE (Phase II): 23.55 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 24.49 ft/s^2

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 14:20 p.m. **TEMPERATURE:** 63.9°F

MAKE and MODEL: Ford Explorer 4.6L (4WD) **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	61.7 mph	148.5 feet	27.57 ft/s^2
Stop #2	59.2 mph	138.1 feet	27.30 ft/s^2
Stop #3	----- mph	------- feet	------- ft/s^2
Stop #4	58.9 mph	135.1 feet	27.62 ft/s^2
Stop #5	59.2 mph	139.0 feet	27.12 ft/s^2
Stop #6	60.6 mph	145.9 feet	27.07 ft/s^2

AVERAGE DECELERATION RATE (Phase I): 27.34 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	61.2 mph	144.1 feet	27.96 ft/s^2
Stop #2	59.6 mph	137.2 feet	27.85 ft/s^2
Stop #3	----- mph	------- feet	------- ft/s^2
Stop #4	60.6 mph	144.3 feet	27.37 ft/s^2
Stop #5	60.1 mph	141.2 feet	27.51 ft/s^2
Stop #6	60.2 mph	142.5 feet	27.35 ft/s^2

AVERAGE DECELERATION RATE (Phase II): 27.61 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 27.47 ft/s^2

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 15:15 p.m. **TEMPERATURE:** 64.7°F

MAKE and MODEL: Ford Expedition 5.4L (4WD) **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	60.7 mph	169.2 feet	23.42 ft/s^2
Stop #2	61.0 mph	171.6 feet	23.32 ft/s^2
Stop #3	----- mph	------- feet	------- ft/s^2
Stop #4	61.2 mph	171.6 feet	23.48 ft/s^2
Stop #5	60.4 mph	166.4 feet	23.58 ft/s^2
Stop #6	59.5 mph	162.8 feet	23.39 ft/s^2

AVERAGE DECELERATION RATE (Phase I): 23.44 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	60.3 mph	164.0 feet	23.85 ft/s^2
Stop #2	60.5 mph	164.8 feet	23.89 ft/s^2
Stop #3	60.3 mph	166.1 feet	23.55 ft/s^2
Stop #4	61.2 mph	168.8 feet	23.87 ft/s^2
Stop #5	59.9 mph	165.4 feet	23.33 ft/s^2
Stop #6	----- mph	------- feet	------- ft/s^2

AVERAGE DECELERATION RATE (Phase II): 23.70 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 23.57 ft/s^2

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 15:49 p.m. **TEMPERATURE:** 65.9°F

MAKE and MODEL: Ford Excursion 6.8L (4WD) **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	61.3 mph	168.9 feet	23.93 ft/s^2
Stop #2	61.3 mph	183.0 feet	22.09 ft/s^2
Stop #3	59.3 mph	167.0 feet	22.65 ft/s^2
Stop #4	61.0 mph	171.3 feet	23.36 ft/s^2
Stop #5	60.5 mph	172.3 feet	22.85 ft/s^2
Stop #6	----- mph	------- feet	------- ft/s^2

AVERAGE DECELERATION RATE (Phase I): 22.98 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	60.9 mph	168.7 feet	23.65 ft/s^2
Stop #2	----- mph	------- feet	------- ft/s^2
Stop #3	60.0 mph	162.2 feet	23.87 ft/s^2
Stop #4	59.2 mph	158.6 feet	23.77 ft/s^2
Stop #5	60.1 mph	159.8 feet	24.31 ft/s^2
Stop #6	61.2 mph	164.6 feet	24.48 ft/s^2

AVERAGE DECELERATION RATE (Phase II): 24.02 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 23.50 ft/s^2

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 16:19 p.m. **TEMPERATURE:** 65.6°F

MAKE and MODEL: Ford LWB Crown Victoria 4.6L **BRAKE SYSTEM:** Anti-Lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	----- mph	------- feet	------- ft/s^2
Stop #2	60.5 mph	143.1 feet	27.51 ft/s^2
Stop #3	59.8 mph	138.7 feet	27.73 ft/s^2
Stop #4	60.2 mph	143.2 feet	27.22 ft/s^2
Stop #5	61.0 mph	145.4 feet	27.53 ft/s^2
Stop #6	60.3 mph	143.8 feet	27.20 ft/s^2

AVERAGE DECELERATION RATE (Phase I): 27.44 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	60.0 mph	141.6 feet	27.35 ft/s^2
Stop #2	60.2 mph	143.7 feet	27.13 ft/s^2
Stop #3	60.4 mph	144.5 feet	27.16 ft/s^2
Stop #4	60.5 mph	145.8 feet	27.00 ft/s^2
Stop #5	----- mph	------- feet	------- ft/s^2
Stop #6	61.0 mph	145.9 feet	27.43 ft/s^2

AVERAGE DECELERATION RATE (Phase II): 27.21 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 27.33 ft/s^2

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 16:44 p.m. **TEMPERATURE:** 64.2°F

MAKE and MODEL: Dodge Durango 4.7L (2WD) **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	----- mph	------- feet	------- ft/s^2
Stop #2	60.0 mph	154.6 feet	25.05 ft/s^2
Stop #3	60.4 mph	147.1 feet	26.68 ft/s^2
Stop #4	60.6 mph	159.7 feet	24.73 ft/s^2
Stop #5	60.4 mph	153.8 feet	25.51 ft/s^2
Stop #6	61.1 mph	159.5 feet	25.18 ft/s^2

AVERAGE DECELERATION RATE (Phase I): 25.43 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	60.1 mph	153.4 feet	25.33 ft/s^2
Stop #2	61.2 mph	158.3 feet	25.45 ft/s^2
Stop #3	60.8 mph	158.4 feet	25.10 ft/s^2
Stop #4	61.5 mph	168.6 feet	24.13 ft/s^2
Stop #5	60.6 mph	169.3 feet	23.33 ft/s^2
Stop #6	----- mph	------- feet	------- ft/s^2

AVERAGE DECELERATION RATE (Phase II): 24.67 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	Yes
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 25.05 ft/s^2

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 15, 2001

BEGINNING TIME: 17:10 p.m. **TEMPERATURE:** 64.4°F

MAKE and MODEL: Dodge Durango 4.7L (4WD) **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	61.6 mph	162.3 feet	25.15 ft/s^2
Stop #2	----- mph	------- feet	------- ft/s^2
Stop #3	60.5 mph	166.1 feet	23.70 ft/s^2
Stop #4	61.3 mph	164.3 feet	24.60 ft/s^2
Stop #5	60.5 mph	164.5 feet	23.93 ft/s^2
Stop #6	60.0 mph	158.1 feet	24.49 ft/s^2

AVERAGE DECELERATION RATE (Phase I): 24.38 ft/s^2

HEAT SOAK: (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 – 0 mph decelerations @ 22 ft/sec.^{2})

TEST: (Six 60 – 0 mph impending skid (ABS) maximum deceleration rate stops)

			DECELERATION RATE
Stop #1	61.7 mph	166.8 feet	24.55 ft/s^2
Stop #2	60.9 mph	167.5 feet	23.82 ft/s^2
Stop #3	60.3 mph	163.6 feet	23.91 ft/s^2
Stop #4	60.2 mph	165.5 feet	23.55 ft/s^2
Stop #5	60.2 mph	166.0 feet	23.48 ft/s^2
Stop #6	----- mph	------- feet	------- ft/s^2

AVERAGE DECELERATION RATE (Phase II): 23.86 ft/s^2

Phase III

	Yes/No
Evidence of severe fading?	Yes
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECELERATION RATE: 24.12 ft/s^2

ERGONOMICS AND COMMUNICATIONS

ERGONOMICS	Chevrolet Tahoe 2WD	Chevrolet Tahoe 4WD	Ford 4WD Explorer	Ford 4WD Expedition
FRONT SEAT				
Padding	8.40	8.40	7.70	7.80
Depth of Bucket Seat	8.40	8.40	7.50	7.50
Adjustability – Front to Rear	8.60	8.60	7.90	8.50
Upholstery	8.30	8.30	8.90	7.80
Bucket Seat Design	8.40	8.40	8.20	7.40
Headroom	9.00	9.00	8.20	9.70
Seatbelts	6.80	6.80	7.80	8.60
Ease of Entry and Exit	7.20	7.20	8.00	7.50
Overall Comfort Rating	8.20	8.20	8.11	8.00
REAR SEAT				
Leg room – Front seat back	8.20	8.20	6.40	8.60
Ease of Entry and Exit	7.40	7.40	6.80	7.50
INSTRUMENTATION				
Clarity	8.60	8.60	7.70	8.40
Placement	8.80	8.80	8.10	8.30
VEHICLE CONTROLS				
Pedals, Size and Position	8.50	8.50	7.90	8.20
Power Window Switch	8.90	8.90	8.30	8.70
Inside Door Lock Switch	8.20	8.20	5.80	7.90
Automatic Door Lock Switch	8.70	8.70	8.50	8.80
Outside Mirror Controls	8.60	8.60	6.30	8.20
Steering Wheel, Size, Tilt Release, and Surface	8.40	8.40	7.30	8.30
Heat/AC Vent Placement and Adjustability	8.60	8.60	7.30	8.40
VISIBILITY				
Front (Windshield)	8.40	8.40	7.80	9.10
Rear (Back Window)	6.80	6.80	7.00	7.60
Left Rear Quarter	7.30	7.30	7.00	8.00
Right Rear Quarter	7.10	7.10	7.40	8.00
Outside Rear View Mirrors	8.80	8.80	7.10	7.60
COMMUNICATIONS				
Dashboard Accessibility	8.07	8.07	7.13	7.73
Trunk Accessibility	8.89	8.89	7.44	8.67
Engine Compartment	8.00	7.67	7.17	7.83
TOTAL SCORES	**229.56**	**229.23**	**210.75**	**228.63**

ERGONOMICS AND COMMUNICATIONS

ERGONOMICS	Ford 4WD Excursion	Ford LWB Crown Vic	Dodge 2WD Durango	Dodge 4WD Durango
FRONT SEAT				
Padding	8.30	7.00	7.30	7.11
Depth of Bucket Seat	8.00	7.00	7.20	7.11
Adjustability – Front to Rear	8.50	8.10	7.90	7.78
Upholstery	7.60	7.50	7.40	7.78
Bucket Seat Design	7.90	7.00	7.40	7.56
Headroom	9.70	8.00	8.60	8.33
Seatbelts	8.40	7.70	7.80	7.56
Ease of Entry and Exit	8.20	8.50	8.00	7.89
Overall Comfort Rating	8.40	7.80	7.90	7.67
REAR SEAT				
Leg room – Front seat back	9.00	8.50	4.80	5.22
Ease of Entry and Exit	7.90	8.10	5.20	6.11
INSTRUMENTATION				
Clarity	8.50	8.60	7.90	7.67
Placement	8.60	8.40	7.90	7.56
VEHICLE CONTROLS				
Pedals, Size and Position	8.20	8.20	7.40	7.33
Power Window Switch	8.70	8.50	8.30	8.11
Inside Door Lock Switch	8.50	8.40	7.60	7.56
Automatic Door Lock Switch	8.80	8.60	7.20	7.22
Outside Mirror Controls	8.50	8.00	7.60	7.78
Steering Wheel, Size, Tilt Release, and Surface	8.50	8.60	7.10	7.11
Heat/AC Vent Placement and Adjustability	8.20	8.20	7.50	7.13
VISIBILITY				
Front (Windshield)	9.00	8.60	8.00	7.89
Rear (Back Window)	7.90	7.60	6.80	6.67
Left Rear Quarter	8.30	7.80	6.80	6.78
Right Rear Quarter	8.40	7.60	6.90	6.89
Outside Rear View Mirrors	8.90	7.00	7.90	7.78
COMMUNICATIONS				
Dashboard Accessibility	8.07	8.00	7.53	7.40
Trunk Accessibility	8.67	8.22	7.22	6.89
Engine Compartment	7.50	7.83	7.33	7.33
TOTAL SCORES	**235.14**	**223.35**	**206.48**	**205.19**